VOL. XVI, No. 9 CHICAGO, AUGUST 26, 1909 $3.00 PER YEAR

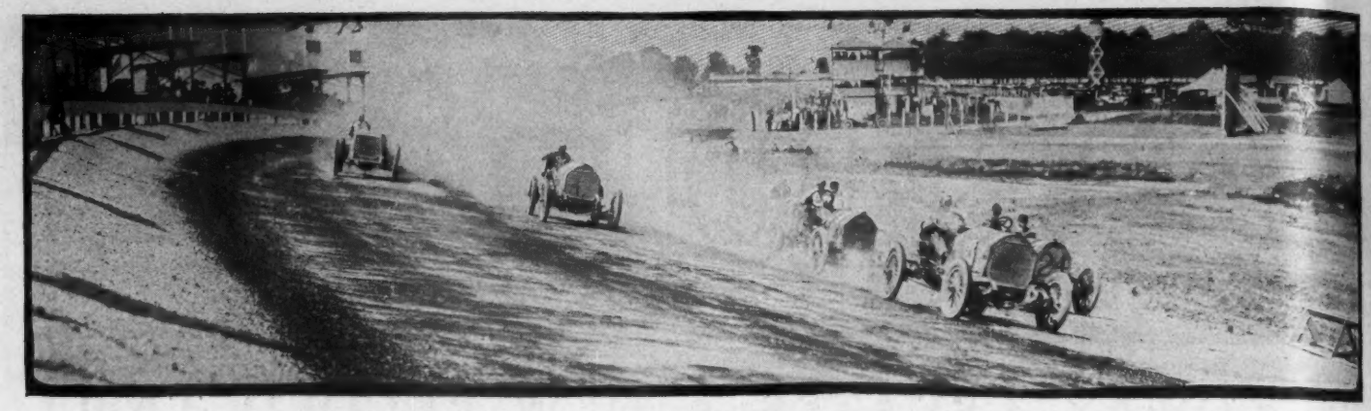
MOTOR AGE

SPEEDWAY CREATES A NEW RECORD TABLE

INDIANAPOLIS, Ind., Aug. 24—America's new motoring era has been opened and racing in this country is being revolutionized through the enterprise of Carl Fisher, A. C. Newby, F. H. Wheeler and J. A. Allison, who have enough confidence in the sport to invest $400,000 in a speedway which is devoted to motoring interests, which was thrown open to the public last week when the first meet was run Thursday, Friday and Saturday, which resulted in the demonstration that at last those who are devotees to the Goddess of Speed have a proper shrine at which to worship. The 3 days of sport resulted in a shattering of records that has made a new slate. Of course it is hard to compare these marks with previous ones, for heretofore American track records have been established on tracks built for horse racing and entirely inadequate for motor racing.

Indianapolis starts the ball rolling with some marks that will stand for some time. Every one of the standard distances was cut and in one instance an Ormond record went by the board. Thirty-seven times the cars that were clocked eclipsed previous records. In the case of the 100-mile all nine cars timed beat it, as also was the case in the 200-mile. This fattened the prestige of eight different makes of cars, the Buick, National, Chadwick, Benz, Fiat, Jackson, Marmon and Stoddard-Dayton.

It must be admitted that the surface of the track was not in the best possible condition, but then there are extenuating circumstances. From the time work on the speedway started last spring up to the first of this month Engineer Andrews was greatly handicapped by the rainy weather and it only was by working night and



After the Start of 10-Mile Race Friday for Cars Entered in 300-Mile Race Saturday

The Track Is 54 Feet Wide on the Staightaway

day the last 2 weeks that he was able to complete the circuit. Possibly it would have been better to have postponed the meet, but this was not done and so another chapter of motoring history was written.

Competition Is Keen

So far as the racing itself was concerned, the sport was interesting and exciting. With a ½-mile straightaway in which to finish and with turns so easy that they were hardly noticeable it was possible to have some real competition. On an ordinary track it is seldom the spectators enjoy close finishes and it is still more rare to see a car be able to master up a sprint at the end. But at Indianapolis last week there were several instances of this, much to the enjoyment of the public.

Better support never was given by this same public and the first meet shows a big profit on the right side of the ledger—possibly $50,000. It cost about $10,000 to stage the affair and Director Moross stated Saturday that his gross receipts ran over $60,000. The first day brought out a crowd of 15,000, big enough to satisfy most promoters. The second day there were 22,000 in the stands and on Saturday, the last day, the grounds were packed, it being estimated that there were at least 40,000 in the stands and scattered around the park. The organization by which these crowds were handled seemed perfect. There was little confusion noted and the stands seemed to fill as if by magic. Even though the racing started at noon each day the people managed somehow to be there in time and on Saturday, when the card opened at 11:30, all the seats were gone at that hour.

The transportation problem seems to have been solved. There was an excellent railroad service which brought the people out in 15 minutes from the city, while the trolley lines negotiated it in reasonably good time. Thousands drove out in motor cars and yet the road leading to the park never seemed congested even when returning at night.

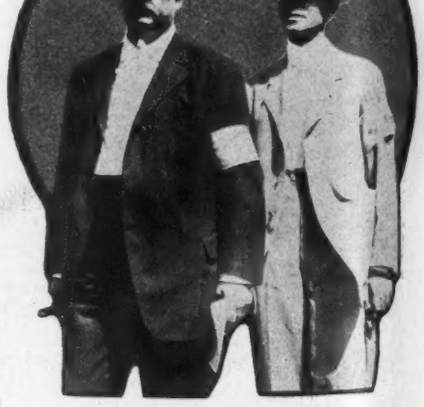
The speedway received magnificent support from surrounding cities. Chicago, usually decidedly clammy, must have sent at least 1,000 to Indianapolis. A tour to the meet was organized and some fifty or sixty cars made the trip last Wednesday. Dayton, where the Stoddard-Dayton car is manufactured, sent over one train load of 2,500 people. Arrangements had been made to transport 500 of the Stoddard-Dayton workmen over in a special train, but when it came time to start it was discovered that 2,500 people had gathered for the trip, so it was necessary to add more cars.

Officials Are Competent

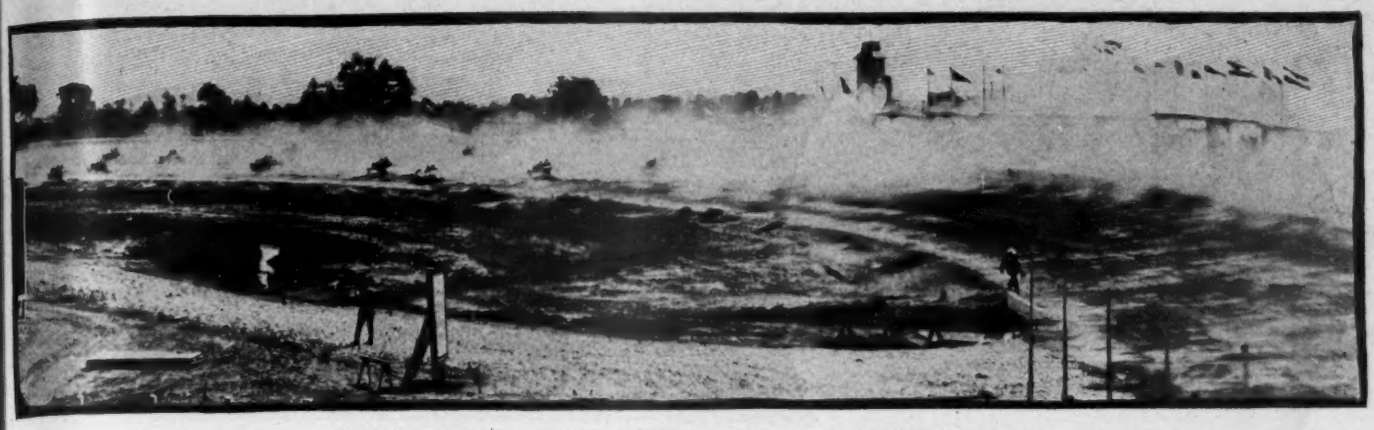
The officials selected to handle the meet did their work well and there was no hitch in the running of the races, no weary wait or wrangle. Hardly would one race finish before the cars in the next one would be lining up and it was nothing unusual to see Starter Wagner about to fire his gun before the winner of the preceding race had a chance to get off the track. The timing system which was used at the meet worked to perfection and the people knew the winners and the time before the cheers had died out.

Fatalities of the Meet

The one black cloud on the meet was the death list that resulted because of accidents on Thursday and again on Saturday. In the 250-mile race for the Prest-O-Lite trophy William A. Bourque and his mechanic, Harry Holcomb, the Knox crew, were killed, just how no one knows, for neither lived long enough to tell. It was after 200 miles had been covered. Bourque had gradually climbed into a good position and he was looked upon as a possible winner. He had turned into the stretch after a brush with Chevrolet and it is said he and his mechanic had looked around at the same time. Why they did no one knows, and the next instant there was an upset, the Knox turned turtle and the two men were in a dying condition. Something had given away in front and the front axle was detached from the car, which was in a wrecked condition. Poor Bourque and Holcomb died in a short time.



F. H. Wheeler and A. C. Newby

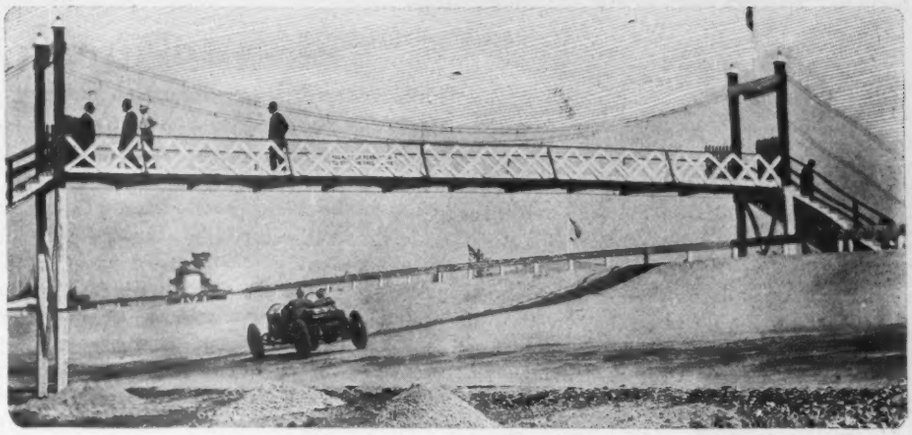


CARS BUNCHED ON THE FIRST TURN AT START OF THE 300-MILE RACE

Friday's racing was run off without a mishap worth mentioning and it looked up to late Saturday afternoon as if the meet would wind up without any more accidents. Then came the Merz trouble, Merz' National, in the Wheeler & Schebler 300-mile race, running over the bank, Kellum, the mechanic, and two spectators being killed. A few minutes after Keene, driving a Marmon, ran into a fence, being slightly injured himself, and his mechanic suffering from a fractured skull, which is not expected to prove fatal. It is said that Keene was asleep at the time, but this fact has not been proven. This accident occurred near the bridge crossing the track near the bleachers and following it the referee decided to call the race off, although it had only reached the 235th mile.

Will Spend Another $100,000

Since the meet there has been an outcry from the public which seems inclined to blame the speedway for the deaths, and heeding this the promoters have determined to do everything in their power to make the plant safe. A meeting was held this morning at which an additional $100,000 was subscribed to put the track in absolutely safe condition and to build safeguards for the drivers and the public. There is talk also of revising the rules which will forbid a driver going more than 100 miles without rest and it is even suggested that there be a 10-minute intermission in the long races to be devoted to the examination of the cars themselves. Also it is planned to compel drivers to change their tires after a certain number of miles.



UNDER THE BRIDGE AT THE TURN ONTO THE BACKSTRETCH

All this talk, however, does not make the critics believe that the speedway can be blamed. Those who have had years of experience in racing believe that the track is perfectly safe and constructed on the right lines. They admit that during the meet the surface was somewhat rough, but still they think that Engineer Andrews has done his work well and produced a circuit which is capable of almost any speed and safe at any spot on the track. Many blame the drivers themselves for the accidents, asserting that if the physical condition of the pilots had been inquired into it would have been found that the men did not have the necessary strength to go through such rigorous tests.

Drivers Overworked

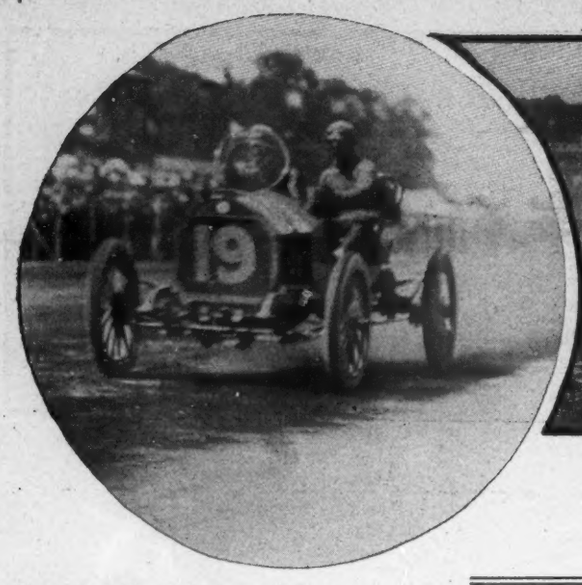
With five and six events carded each day and with one of them always a long distance trial, the drivers were over-ambitious. Many of them would drive in two, three and sometimes four races a day. Then, to make matters worse, they would drive 50 and 60 miles a day in the morning tuning up their cars for the racing in the afternoon. Often, too, it was necessary to work most of the night, so that some of the pilots found themselves in a weakened condition when it came to the actual racing itself. In that condition it was little wonder that accidents should occur.

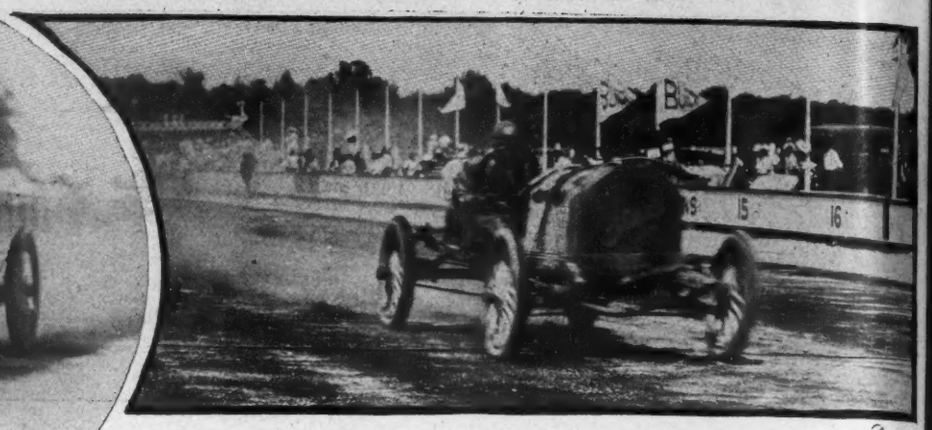
In the case of Bourque, that driver had been through a long and rigorous campaign this summer and his physical condition is said to have been none of the best when he came to the speedway for the meet. At the time of his accident he had driven 200 miles in a race which was exciting and strenuous. Merz, too, had been driving hard for several days and he, too, was past the 200-mile mark when he went over the bank.

Jackson Enters Protest

Since the decision handed down by Referee Stevens in the Wheeler & Schebler race there has been considerable complaint made by those whose chances of winning were good. The Jackson people intend making a fight for the cup and today they gave notice of their intention of appealing to the American Automobile Association, asserting that when the race was stopped after 235 miles had been completed the Jackson, driven by Lynch, had a comfortable lead and seemed certain to win. Closest to him was de Palma in the Fiat, but he had stopped at the pit to repair a spring and the Jackson had improved the opportunity to pick up a couple of laps on him. There is some talk of running for the cup at the next meet, which has been arranged for next month, when a 24-hour race will be put on, with a big field promised.

CARL FISHER AND J. A. ALLISON





THURSDAY—CHEVROLET IN BUICK WINNING NO. 2 EVENT, 10-MILE RACE

Burman in a Buick Wins

THURSDAY—NO. 19 STODDARD WINNING OPENING EVENT AT SPEEDWAY

INDIANAPOLIS, Ind., Aug. 19—A Stoddard-Dayton, driven by Schweitzer, today achieved the unique honor of capturing the first race ever run on an American speedway when it finished this afternoon in event No. 1, a 5-mile event for stripped chassis in the 161-230 cubic inches class, which opened the initial card of the Indianapolis enterprise before a crowd of 15,000 people, marking a new era in motor racing in this country.

Five races in all had been carded and each and every one of them produced fast time, although the condition of the track was none too good; in fact, the surface was so rough and the drivers complained so much about it that following the accident which resulted in the death of Bourque and Holcombe, Referee Stevens ordered the promoters to improve the circuit before there could be another day of racing. Following this order Director Moross prepared for a big gang of workmen laboring all night with the steam roller, and also ordered that the track be oiled at least half of its circumference because of the dust clouds raised by the flying wheels. Today only the home stretch has been treated in this manner and it was noticed that there was little dust raised at the finish. On the back stretch and turns, though, the dust was kicked up in such clouds as to make driving dangerous, as the men could not see far enough ahead to avoid cars in front.

Of course the feature of the day was the 250-mile race for the Prest-O-Lite trophy, the cars being limited to a piston displacement of from 301 to 450 cubic inches, the field including the unfortunate Bourque in the Knox, Kincaid in the National six and Merz in the National four, Strang, Chevrolet and Burman in Buicks, Miller and Clemens in Stoddard-Daytons and Ellis in the Jackson. It was the first long distance race on the speedway and naturally there was great interest displayed in it by the spectators as well as the officials.

At the start Chevrolet, Burman and Ellis got out in front and at the 10-mile post it was Chevrolet who led the field with a

THURSDAY—START EVENT NO. 2, 10-MILE STRIPPED CHASSIS RACE

THURSDAY'S SUMMARIES

Event No. 1., 5-mile stripped chassis, 161 to 230 cubic inches piston displacement:

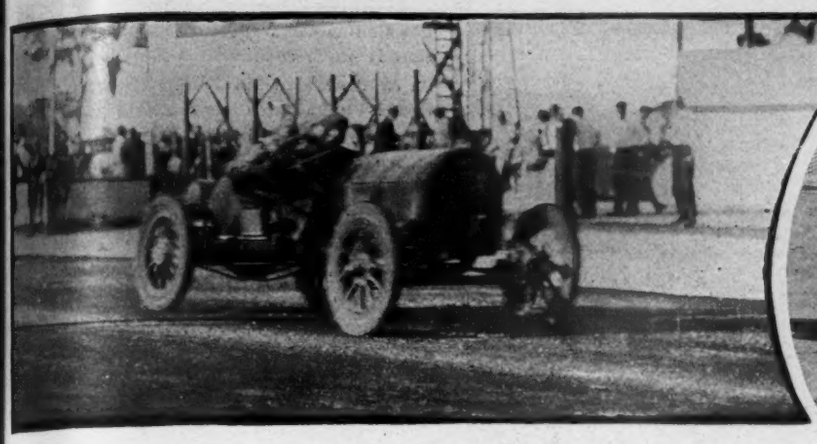
No.	Car and driver	Cyl.	No. Bore and stroke	Time
19	Stoddard, Schweitzer	4	3⅞x4½	5:13 4-10
18	Stoddard, Wright	4	3⅞x4½	.....
30	Buick, DeWitt	4	3¼x3¼	.....
49	Velle, Stickney	4	4 x4	.....
31	Buick, Ryall	4	3¼x3¼	.....

Event No. 2, 10 miles, stripped chassis, 231-300 cubic inches piston displacement:

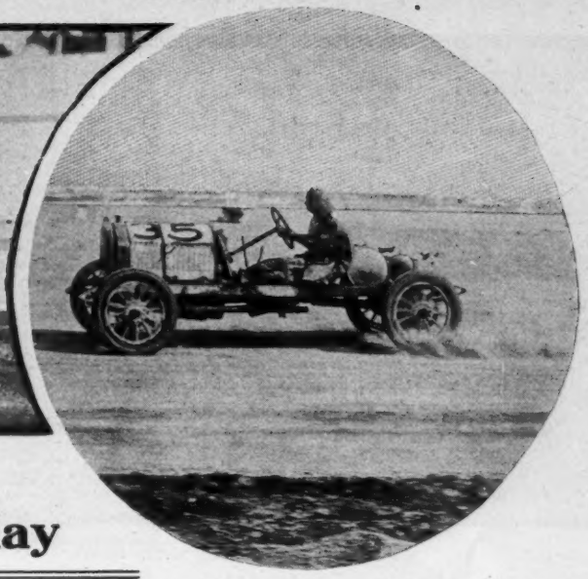
No.	Car, driver	No. Cyl.	Bore and stroke	Time
34	Buick, Chevrolet	4	4 23-64x5	8:56 4-10
33	Buick, Strang	4	4 23-64x5	9:13 1-10
32	Buick, Burman	4	4 23-64x5	9:52 7-10
15	Marmon, Stillman	4	4½ x4½	.....
16	Marmon, Stillman	4	4½ x4½	.....
14	Marion, Stutz	4	4½ x4½	.....

TABLE SHOWING THE LAP POSITION OF CARS AND TIME OF THREE LEADERS AT STANDARD POINTS

No.	Car and Driver	No. of Cyls.	Bore and Stroke	10 miles	20 miles	30 miles	40 miles	50 miles	60 miles	70 miles	75 miles	80 miles	90 miles
35	Buick, Burman	4	4½x5	9.40 1/5 2	19.05 3/5 2	28.23 7/5 2	37.42 1/5 1	47.05 1/5 2	2	1.05.45 2	1.10.24 1/5 2	5	4
61	Stoddard-Dayton, Clemens	4	4¾x5	8	8	8	8	8	8	9	9	9	8
6	National, Kincaid	6	5x5 1/8	4	19.24 3	28.49 1/5 3	3	48.05 3/5 3	3	1.07.04 3/5 3	1.10.49 3/5 3	1.16.37 1/5 2	5 1.28.3
7	National, Merz	4	5x5 1/8	6	7	7	6	6	6	6	6	4	3
21	Stoddard-Dayton, Miller	4	4¾x5	5	5	6	7	7	7	7	7	8	7 1.27.3
3	Jackson, Ellis	4	4¾x4¾	9.52 1/5 3	4	4	4	5	5	5	5	3	2
8	Knox, Bourque	4	5x4¾	7	6	5	5	4	4	4	4	6	6
37	Buick, Chevrolet	4	4½x5	9.23 1/5 1	18.35 1/5 1	28.06 1/5 1	37.44 1/5 2	46.54 1	1	1.05.14 1	1.09.47 1	1.14.18 1/5 1	1.23. 1
36	Buick, Strang	4	4½x	9	9	9	9	9	9	8	8	7	9 and



THURSDAY—HARROUN IN NO. 15 MARMON WINNING EVENT NO. 4, 5 MILES



THURSDAY—BURMAN IN 250-MILE RACE WHICH HE WON

Prest-O-Lite Trophy On Thursday

margin of 17 seconds over his team mate, Burman. Chevrolet hung onto the lead grimly and led at 20 and 30 miles, Burman chasing him. Ellis, though, was caught by Kincaid in the National in the sixth lap, where he stuck to the seventeenth lap, where he was shoved down another peg when Bourque began to climb. Before this, though—in the fifteenth lap—Burman had forged to the front and Chevrolet had to trail. At 50 miles Burman was but 11 seconds ahead of Chevrolet, while Kincaid was 2 minutes back of the leader. Bourque, Ellis, Miller, Clemens and Strang followed.

Strang was not a factor because of a sensational incident that occurred just as he was finishing the second lap. As he approached the pits it was discovered his car was afire and a hasty stop was made. A fire extinguisher on a push car was rushed across the track and Strang's mechanic used it to put out the flames. Then Strang wanted to resume, but an objection was raised, it being claimed that he had received outside assistance in the shape of the fire extinguisher. Strang claimed, though, that as his mechanic had put out the fire there was no outside assistance. Finally, after considerable argument, he was allowed to resume under protest, it being understood the A. A. A. would thresh it out if he did anything. Burman and Chevrolet had things their own way until the thirty-second lap, when Chevrolet dropped back and Kincaid, Ellis and Merz pasesd him. Chevrolet, however, caught Merz. At 90 miles Strang had enough and retired. Passing the first century the order was Burman, Ellis, Kincaid, Chevrolet, Merz, Bourque, Miller and Clemens. Burman had Ellis by more than 5 minutes. At 110 miles Chevrolet had worked back into second place, while Ellis had fallen to fifth place. No change in the order occurred until the fifty-third lap, when Chevrolet again lost his grip on second place and fell to fourth. Bourque began to look dangerous in the fifty-fourth

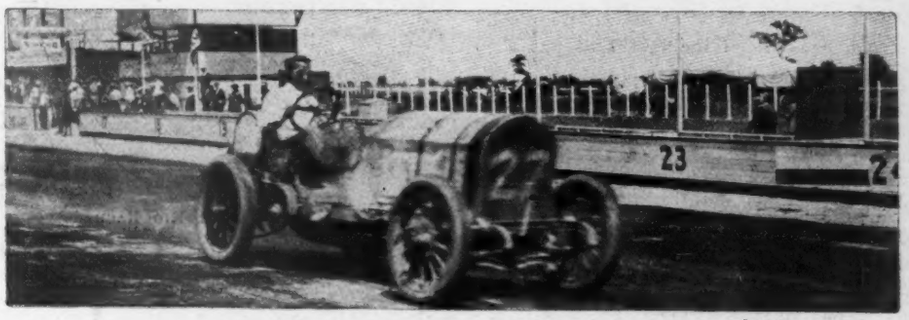
THURSDAY'S SUMMARIES

Event No. 3, 5 miles, stripped chassis, 301-450 cubic inches piston displacement:

No.	Car and driver	Cyl.	Bore and stroke	Time
3	Knox, Bourque	4	5 x4¾	4:45 5-10
35	Buick, Burman	4	4½x5	4:46 4-10
37	Buick, Chevrolet	4	4½x5	4:48 6-10
36	Buick, Strang	4	4½x5	.....
21	Stoddard, Miller	4	4¾x5	.....
52	Jackson, Lynch	4	4¾x4¾	.....
53	Jackson, Ellis	4	4¾x4¾	.....

Event No. 4, 10 miles, free-for-all handicap:

No.	Car and driver	Handicap.	Time.
15	Marmon, Harroun	1:45	8:22 5-10
51	Jackson, Lynch	1:45	8:23 4-10
8	National, Aitken	:20	8:36 2-10
18	Stoddard-Dayton, Wright	1:45	.....
2	Apperson, McCalla	:40	.....
22	Stoddard-Dayton, Miller	:40	.....
30	Buick, DeWitt	:40	.....
4	Knox, Denison	:20	.....
5	Lozier, Heina	:20	.....
35	Buick, Burman	:20	.....
37	Buick, Chevrolet	:20	.....
66	Stearns, Cameron	:20	.....
16	Marmon, Keene	1:45	.....
14	Marmon, Tinkler	1:45	.....



THURSDAY—OLDFIELD IN BENZ SETTING MILE RECORD AT :43 1-10.

THURSDAY'S 250-MILE RACE FOR THE PREST-O-LITE TROPHY ON THE INDIANAPOLIS MOTOR SPEEDWAY

100 miles	110 miles	120 miles	130 miles	140 miles	150 miles	160 miles	170 miles	180 miles	190 miles	200 miles	210 miles	220 miles	230 miles	240 miles	250 miles
4	2	1.57.17 2	2.08.06 1/10 1	2.17.46 1/10 1	2.27.32 1/10 1	2.37.15 1/10 1	2.52.03 1/10 1	3.02.44 7/10 1	3.14.43 1/10 1	3.24.13 1/10 1	3.53.45 3/10 2	4.05.50 1/10 2	4.15.55 1/10 1	4.25.46 1/10 1	4.38.57 1/10 1
8	7	7	7	7	5	5	3.19.22 1/10 3	3.30.12 3/10 3	3.41.03 1/10 3	3.52.04 1/10 3	3.53.45 3/10 3	4.13 37 1/10 3	4.24.28 1/10 2	4.35.12 1/10 2	4.46.01 1/10 2
5 1.28.2 3	3	2.02.47 3	2.13.06 1/10 3	2.23.29 1/10 3	2.36.30 3/10 2	2.47.00 3/10 2	5	5	4	4	4	4	4.31.59 3	4.41.43 1/10 3	Did not cross line
7 1.27.3 2	6	6	6	6	4	4	4	4	5	5	5	5	4	4	4.57.07 1/10 3
7 1.27.31 1/10 2	8	8	8	8	6	6	6	6	6	6	6	6	.....	.....	.....
6 1.23.1 1	5	4	5	5	2.39.53 3/10 3	2.48.23 1/10 3	2.58.00 1/10 2	3.07.35 1/10 2	3.41.03 1/10 2	3.28.47 1/10 2	3.39.53 1/10 1	3.49.37 7/10 1	.....	.....	.....
9 and	4	4	4	2.23.01 1/10 2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	1.41.28 1/10 1	1.54.53 1	2.11.11 1/10 2	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
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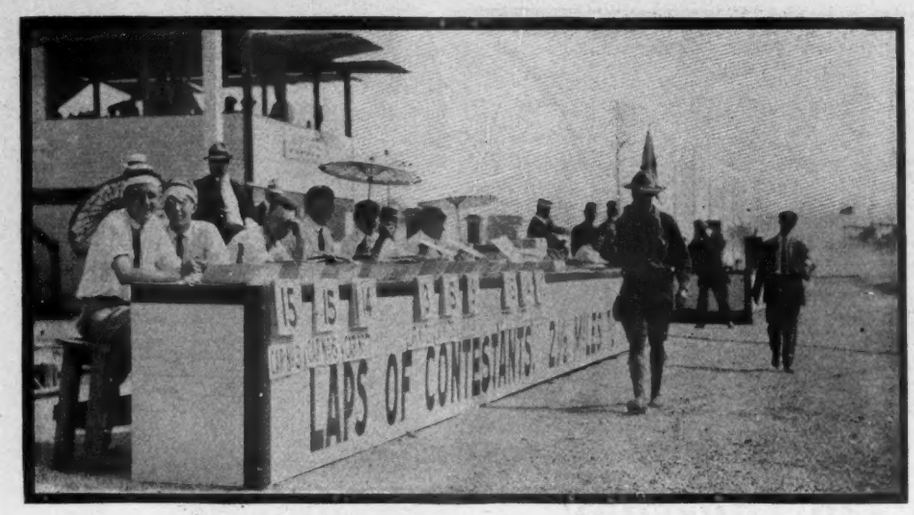


LINE OF SCORERS WITH SENTRY ON GUARD

lap, when the checkers reported him second and at 140 miles he was second, 28 minutes ahead of Kincaid. Burman at that time was 5 minutes to the good.

It was not long after—in the fifty-eighth lap—that the accident occurred which killed the Knox crew and at the same time Chevrolet retired from the race. This left Burman, Kincaid, Ellis, Merz, Miller and Clemens still running. At 150 miles Burman was 11 minutes ahead of Kincaid, while Ellis was 3 minutes back of the National. Ellis went to second place in the sixty-seventh lap and at 175 miles he was 5 minutes 11 seconds behind the leader, while Clemens had advanced to third. This order was maintained to the end of eighty-first lap, and then the Jackson deposed the Buick, having nearly 14 minutes lead over Burman at 210 miles and being 16 minutes 13 seconds to the good at 220 miles. Then came a sensational incident that put the Jackson out of the running.

Ellis had just passed the judges' stand entering his eighty-ninth lap when his engine stopped and his car coasted to the south pits, whereas the Jackson box was in the north section. Ellis and his mechanic went to work with feverish energy to resume the race. Victory seemed certain with only 30 miles to go if only the motor could be started. They cranked and cranked and didn't get a wheeze. Then they discovered the magneto trouble. But by this time the mechanic collapsed and was carried off the track by Ellis, who was all in himself. The exertion told on him, too, and he too fainted. Thereupon Referee Stevens granted permission for a relief crew to go on and Tom Lynch undertook the job of piloting. But he also failed to get the engine started and the dead Jackson stood by the pits while Burman continued on to victory. The elimination of Ellis advanced each of the others, but at the end of the ninetieth lap Miller dropped out. The other four kept running to the end, Burman having nearly 12 minutes advantage as the line was crossed for the last time, Clemens being runner-up, while Merz in the No. 7 National went into third place when his team mate, Kincaid, failed to get to the tape because of a broken gasoline feed on his last round. Burman

MARMON, THIRD IN BIG RACE

landed the trophy with a time record of 4:38:57 4/10; Jap Clemens' time was 4:46:01 8/10, and Merz's 4:57:07 1/10.

Despite the roughness of the track, Barney Oldfield in the Benz set a 1-mile mark that is likely to stand for some time, doing an exhibition in :43 1/10. Of course these figures have been excelled in road and beach trials, but it is the best ever made on a track in this country.

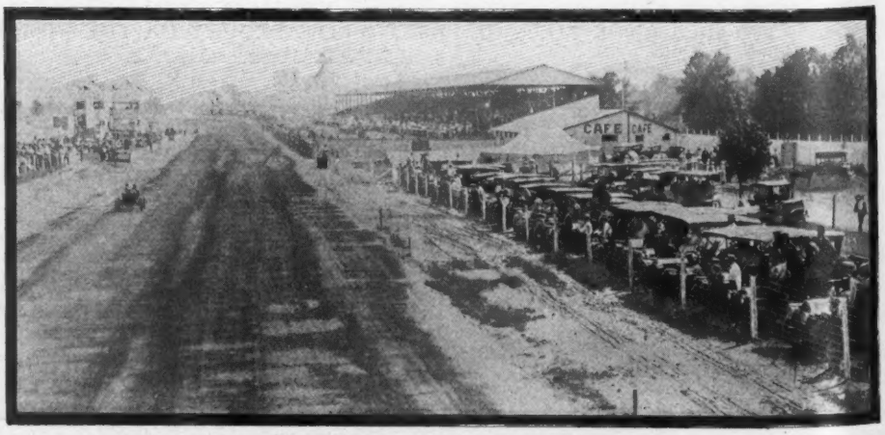
Wright and Schweitzer in Stoddard-Daytons, De Witt and Ryall in Buicks and Stickney in a Velie were the starters in the opener. Ryall went out the first lap and the Velie was not a contender. The three cars that did fight it out went at a good clip, the time of the winner being 5:13 2/10. Then came a 10-mile race for 231-300-inch stripped chassis, in which Chevrolet, Strang and Burman, all in Buicks, ran in the order named, the time being 8:56⅘.

Poor Billy Bourque scored his last victory in the 5-mile stripped chassis race for cars in the 301-450 class when he showed the way home to Clemens in a Stoddard-Dayton and Merz in the National, his time being 4:45⅕. In this an attempt was made to use a flying start, but there was so much trouble in doing it this way that Starter Wagner went back to the standing start. Burman was in front at the end of the first lap and looked the winner coming up the home stretch the last time, but Bourque had enough up his sleeve to win in an exciting finish. Besides Bourque and Burman there started in this race Miller in a Stoddard-Dayton; Chevrolet in a Buick; Strang, Buick; Lynch, Jackson; Ellis, Jackson; De Hymel, Stoddard-Dayton; Clemens, Stoddard-Dayton. Strang got third place.

Harroun, of Chicago, driving a Marmon, won the 10-mile free-for-all handicap in which a good field started. He had 1:45 handicap, the same as No. 51 Jackson. 18 Stoddard, 16 Marmon and 14 Marion. No. 52 Jackson and 20 Stoddard had 1:30 and 40 seconds allowance was given No. 2 Apperson, 22 Stoddard and 30 Buick, while 20 was given No. 4 Knox, 5 Lozier, 8 National, 35 and 37 Buicks and 66 Stearns.

Shock for Bourque's Friends

Springfield, Mass., Aug. 21—When the people of this city picked up their newspapers yesterday morning and saw that Wilfred Bourque and Harry Holcomb had been killed in the races at Indianapolis



LOOKING UP THE WELL-OILED HOMESTRETCH

VIEW SHOWING PITS RANGED ALONG THE POLE

they were shocked. Bourque was very well known in this city, because he had lived here so long. He would have been 30 years old next October and he planned to be married. He was born at West Farnham, Canada, but came to Springfield 22 years ago and secured his education here. In his earlier days he was a bicyclist. For 6 years he had been employed by the Knox company, the last 3 years as a tester, and when the company started into the racing game last fall Bourque and Denison were chosen to drive the cars. They raced in the Vanderbilt and the Lowell races. This year Bourque competed in a number of events. He was injured at the Lowell hill-climb last June, and he also was thrown out of his car at the Springfield climb last fall, but got another and then made the best time of the day. His last appearance previous to the Indianapolis races was at Richfield Springs a week ago, where he won four trophies and was presented with the prizes by Vice-President Sherman. Chicago motorists remember him for his splendid driving in the Cobe race, when he was beaten by a few minutes only by Chevrolet. This was Holcomb's first season in the racing game and his first race was the Indiana event, Indianapolis being his second. The bodies of the two men were brought here Saturday. That of Bourque was taken to the home of his parents here and Holcomb's was sent to West Granville, where his family lived. Funeral services will be held for both tomorrow, and it is probable the Knox plant will be closed out of respect to the memory of the dead racing men.

William E. Wright, general manager of the Knox company, has not decided what will be done relative to future racing. He feels the deaths keenly, for there is a spirit of fraternity in the Knox factory whereby the men look up to Mr. Wright as they would to a father, and he does not feel like sacrificing any lives of his "boys" as he calls them, no matter what the inducements are. Just what caused the accident is an enigma here. Bourque was noted for his quickness, especially with the emergency lever, which he used almost entirely in racing. He had the

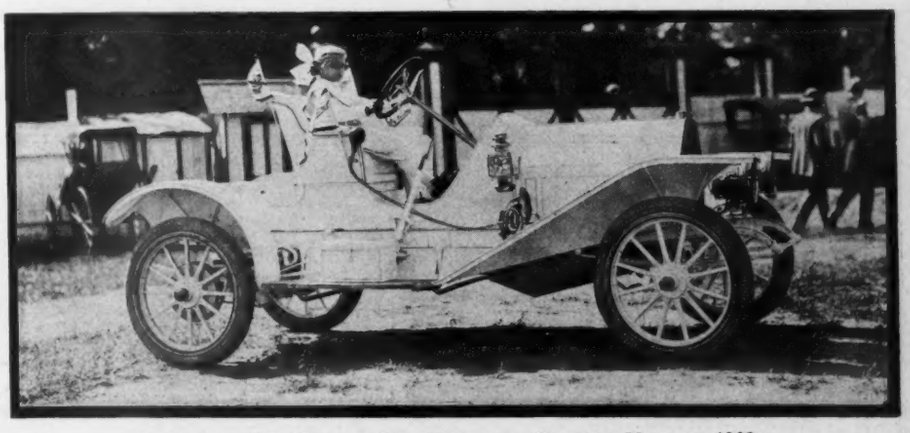
THE LATE W. A. BOURQUE AND H. HOLCOMB

notches taken off the brake so it would release instantly. The fact of the matter, as believed by his friends here, is that he was taken ill from the strain of racing. While he was tall and wiry, he did not look very well this summer and his friends believe that the physical strain caused him to collapse and that brought on the finish at Indianapolis.

If the Knox company continues racing there is some talk of sending for Fred Belcher, who won a race in Texas last week in a Knox. The company has its quarters all engaged in Lowell and last week Bourque went there and drove over the course, saying he expected to get one of the prizes at least. Much will depend upon the decision of Denison, Bourque's partner. His relatives may object to his continuing as a driver, and in that case the company may withdraw its entries at Lowell and elsewhere, where the Knox has been scheduled to compete during the fall months.

Favor Change of Rules

Indianapolis, Ind., Aug. 23—Officials of the Indianapolis motor speedway are planning for a radical change in rules for long distance events. While the management will not meet until later in the week to discuss the proposed changes, those interested in the speedway have given individual expressions favoring changes in the rules. It is believed that when the new rules are drafted, the A. A. A. will not hesitate to sanction long events. Carl G. Fisher, president of the speedway company, said today it was certain events longer than 100 miles would not run in the future on the track unless the rules were changed. He said that it was probable the new rules would provide that for long events the drivers and tires should be changed each 100 miles and that drivers would be subjected to a severe physical examination. It is also the intention to change the arrangement of stands and fences. The railing will be moved back several feet and the private boxes, now on the first curve of the track, will be moved either opposite the grand stand on the inside of the course, or placed north of the grand stand on that side of the track. The factory of the National Motor Vehicle Co. was closed today out of respect for Claude Kellum, the National mechanician, who was killed Saturday afternoon in the 300-mile race.



OVERLAND GOLD-PLATED CAR, PRIZE FOR FASTEST MILE IN 1909

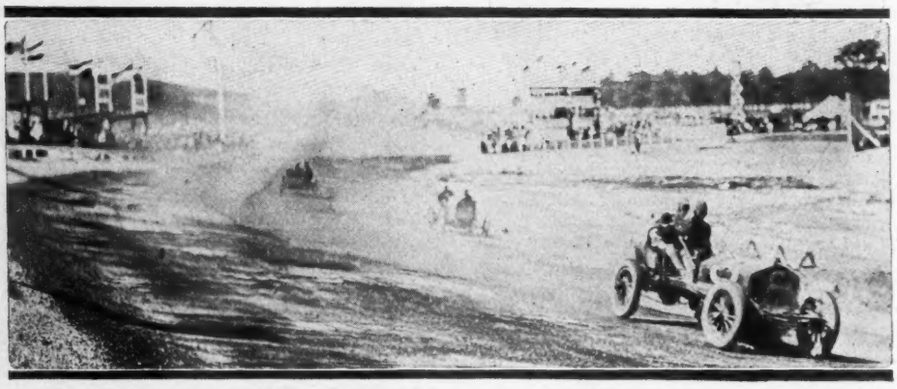
FRIDAY—STODDARD-DAYTON FINISHING FIRST AND SECOND IN 50-MILE RACE

Friday Produces More Records

INDIANAPOLIS, Ind., Aug. 20—The G & J trophy at 100 miles and a 50-mile event furnished the attraction on a well-balanced card today, the second session of the meet, and six events were run off without accidents of any sort to mar the afternoon. As usual an early start was had and the proceedings began at noon, at which time the seating capacity of the stands was taxed to its utmost. By 1 o'clock there were at least 20,000 people looking on.

As on the first day, there was a fine crop of records. By working all night the management had put the course in better shape than it was on the first day, the surface having been oiled half way round, while the work of the steam rollers was easily noticeable. Therefore it was not surprising that Zengel in the Chadwick six should was a half-century run this afternoon it clip off 10 miles in 8:23 1-10, as against the 9:12⅗ made by Oldfield in his Peerless Green Dragon as far back as 1904. Aitken in the National six ran 5 miles in 4:25, as against de Palma's 4:26 in a Fiat at Providence last year. Strang also participated in the feast, clipping the old marks in the G & J trophy race at 100 miles at 20, 30, 40, 50, 60, 70, 80, 90 and 100 miles, the century being turned in 1:32:48 5-10, as against Burman's 1:44:00, made at Columbus, O., this summer.

The fight for the G & J trophy was an interesting one and the feature of the afternoon. Some of the officials wished to cut the distance to 50 miles because the day before the 250-mile Prest-O-Lite event had dragged out until 6:30. As there also was feared there would be a repetition. Most of the contestants, however, lodged a strenuous objection to this, and so it was decided to run the original distance. And so off they went and the grind resolved itself into a battle between the special Indiana trophy Buicks and the stock Marmons, the conditions limiting the field to cars or from 231 to 300 cubic inches piston displacement. As it turned out, Strang won and put up a new set of records, the feature of his race being the fact that he ran from start to finish without a stop



FRIDAY—AITKEN IN NATIONAL LEADING IN 10-MILE RACE, EVENT 8

FRIDAY'S SUMMARIES

Event No. 5, 5 miles, stripped chassis, 231-300 cubic inches piston displacement:

No.	Car and driver	Cyl.	Bore and stroke.	Time
33	Buick, Strang..	4	4 23-64x5	4:48
34	Buick, Chevrolet	4	4 23-64x5	4:55 4-10
14	Marion, Stutz..	4	4½ x4½	6:31 4-10
12	Marion, Monsen	4	4½ x4½	.....

Event No. 6, 10 miles, stripped chassis, 301 to 450 cubic inches piston displacement:

No.	Car and driver	Cyl.	Bore and stroke	Time
7	National, Merz.	4	5 x5 11-16	9:16 3-10
37	Buick, Chevrolet	4	4½x5	4:44 4-10
20	Stoddard, DeHymel	4	4¾x5	10:23 5-10
61	Stoddard, Clemens	4	4¾x5	.....

Times: Five miles—No. 7, 4:48 2-10; No. 37, 4:58; No. 20, 4:59 4-10.

Event No. 8, 10 miles, for Wheeler & Schebler cup cars:

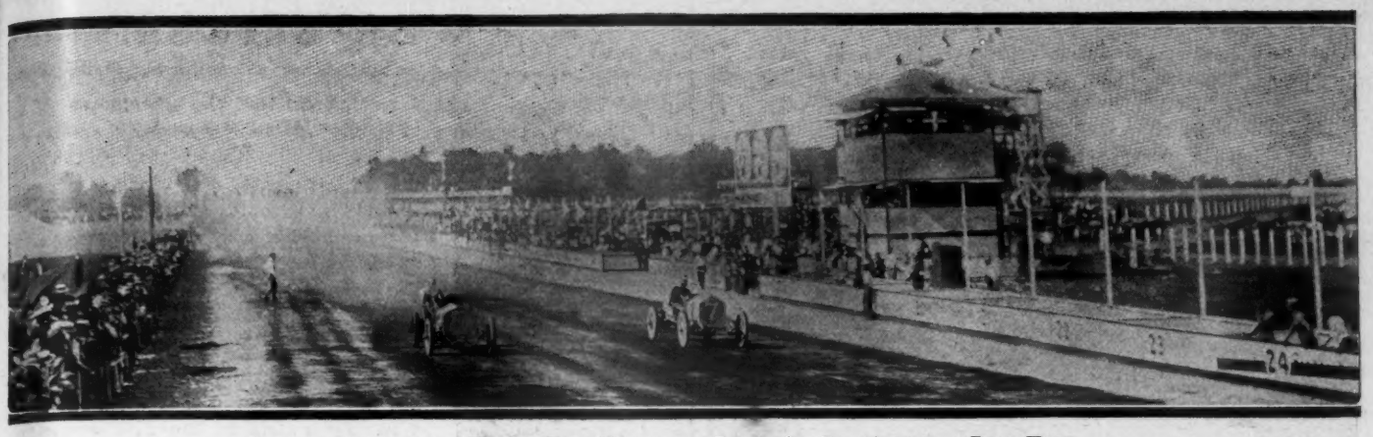
No.	Car and driver	Cyl.	Bore and stroke	Time
8	National, Aitken	6	5 x5	9:26 6-10
1	Apperson, Lytle.	4	5¾x5	9:36 2-10
5	Lozier, Helna..	4	5¾x5¼	9:42 8-10
6	National, Kincaid	4	5 x5 11-16	.....
22	Stoddard, Clemens	4	5¼x5¾	.....
62	Stoddard, DeHymel	4	5¼x5¾	.....

Times: Five miles, No. 6, 4:48 1-10; No. 24, 4:49 4-10; No. 1, 4:55 7-10.

TIMES AND POSITIONS OF CARS AT 10-MILE POINTS IN FRIDAY'S RACE IN WHICH RECORD WAS BROKEN

100 MILE RACE

No. Car	Name of Car	Driver	No. of Cyls.	Bore and Stroke	10 miles	20 miles	25 miles	30 miles	40 miles	50 miles	60 miles	70 miles	75 miles	80 miles	90 miles	100 miles
33	Buick	Strang	4	4 23-64x5	9-25.4 1	18-41.7 1	23-20.1 1	27-55.9 1	37-01.6 1	46-04.6 1	55-24.7 1	1.04-55.8 1	1.09-37.5 1	1.14-18 1	1.23-40 1	1.32-40.85 1
32	Buick	Burman	4	4 23-64x5	10-21.2 2	20-17.9 2	24-52.9 2	30-47.3 2	39-12.7 2	48-55.8 2	1.02-30.7 4	3	1.17-21.1 2	1.22-41.5 2	1.31-49.9 2	1.41-32.3 2
15	Marmon	Stillman	4	4½x4½	4	5	5	4	42-14.7 3	4	1.02-38.7 3	4	3	1.22-50.2 3	1.32-40.8 3	1.42-37.6 3
16	Marmon	Harroun	4	4½x4½	10-21.2 3	4	4	30-47.3 3	4	52-30.8 3	1.02-30.7 2	2	4	4	4	4
34	Buick	Chevrolet	4	.....	5	3	3	5	.....	.....	.....	.....	.....	.....	.....	.....
12	rion	Monsen	4	.....	6	out	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....



FRIDAY—HANDICAP IN WHICH TWO NATIONALS, 7 AND 8, RUN ALMOST A DEAD HEAT

FRIDAY'S SUMMARIES

Event No. 7, trials at mile record:

No.	Car and driver	No. Cyl.	Bore and stroke	Time
27	Benz, Oldfield...	4	6 1-10x8	:43 1-10
54	Fiat, De Palma..	4	5 3-5 x5 1-5	:48 6-10
50	Chadwick, Zengel	6	5 x6	:49 3-10
26	Christie, Christie	4	.....	Not taken

Event No. 11, 5 miles, free-for-all handicap:

No.	Car and driver	No. Cyl.	Bore and stroke	Time
8	National, Aitken	6	5 x5	4:25
7	National, Merz	4	5 x5 11-16	4:25 1-200
22	Stoddard, Miller	4	5¼x5¾	4:30 5-10
52	Jackson, Ellis.	4	4¾x5¾	.....
53	Jackson, Lynch	4	4¾x4¾	.....
1	Apperson, Lytle	4	5¾x5	.....
2	Apperson, McCalla	4	5¾x5	.....
6	National, Kincaid	4	5 x5 11-16	.....
16	Marmon, Keene	4	4½x4½	.....
15	Marmon, Stillman	4	4½x4½	.....
14	Marion, Stritz.	4	4½x4½	.....
20	Stoddard, De Hymel	4	4½x5	.....
12	Marion, Monsen	4	4½x4½	.....

Handicap: No. 8, 10 seconds; No. 7, 20 seconds; No. 22, 30 seconds.

Century Mark Made By Strang

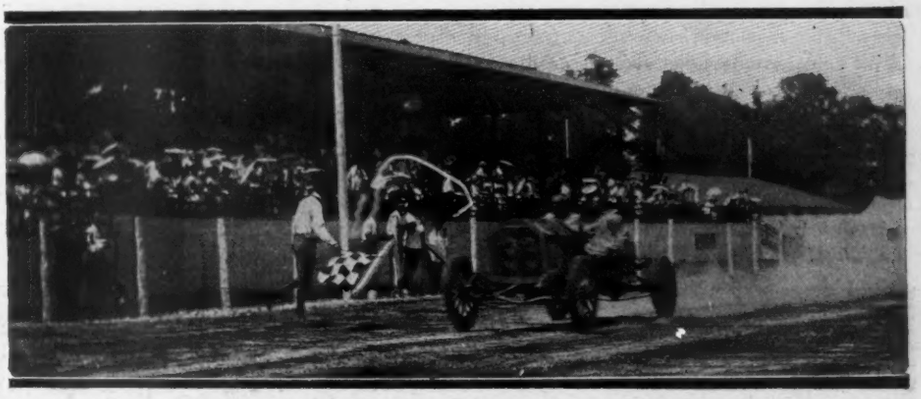
either for repairs, supplies or to change tires. His time showed he had averaged 2:19 2-10 to the lap, a remarkably consistent performance. The runner-up was DeWitt, also in a Buick, who was about 9 minutes back. Two others finished within hailing distance of the winner—Harroun in No. 15 Marmon in 1:42:37 6-10, and Stillman, also in a Marmon. All three timed got inside the Burman record made at Columbus.

Only six started in the race, the other two being Chevrolet in a Buick and Monsen in a Marion. Monsen quit at the 10-mile post, at which time he was in fifth place, while Chevrolet dropped out in the fourteenth lap. Strang never left the result in doubt, leading at every lap. DeWitt chased him consistently from the second lap on, although at the twenty-third lap Stillman was in second place, staying there to the 70-mile pole, where he dropped back to fourth and last place.

At quarter distance Strang had done the distance in 23:20 1-10 and had a lead of 1 minute 21 4-10 seconds over DeWitt, while Chevrolet was close up. At 50 miles there was more than 6 minutes between first and third and at 75 about 8 minutes separated Strang and DeWitt. They ran about the same for the remaining 25, Strang apparently being content to play safe. The Marmons ran consistently all the way through the century and are entitled to considerable credit for their work.

When the field lined up in the 10-mile free-for-all great things were expected, for Barney Oldfield had trotted out the big Benz for its first bit of competition work at Indianapolis. Opposed to him were Zengel in the Chadwick six, Aitken in the National six, Heina in a Lozier, de Palma in Hearne's stock Fiat and Cameron in a Stearns six. It was a brilliant array of talent and the way Oldfield started out it looked as if old Father Time was in for a beating. Oldfield set a merry clip for the first lap and had a fine lead at that time. Then he was seen to slow and in the back stretch the Chadwick went to the front, while the Benz dropped out. It later de-

(Continued on page 13.)



FRIDAY—STRANG WINNING THE HUNDRED AND BREAKING A RECORD

TIMES AND POSITIONS OF CARS IN THE 50-MILE AND THE 10-MILE FREE-FOR-ALL RACES FRIDAY

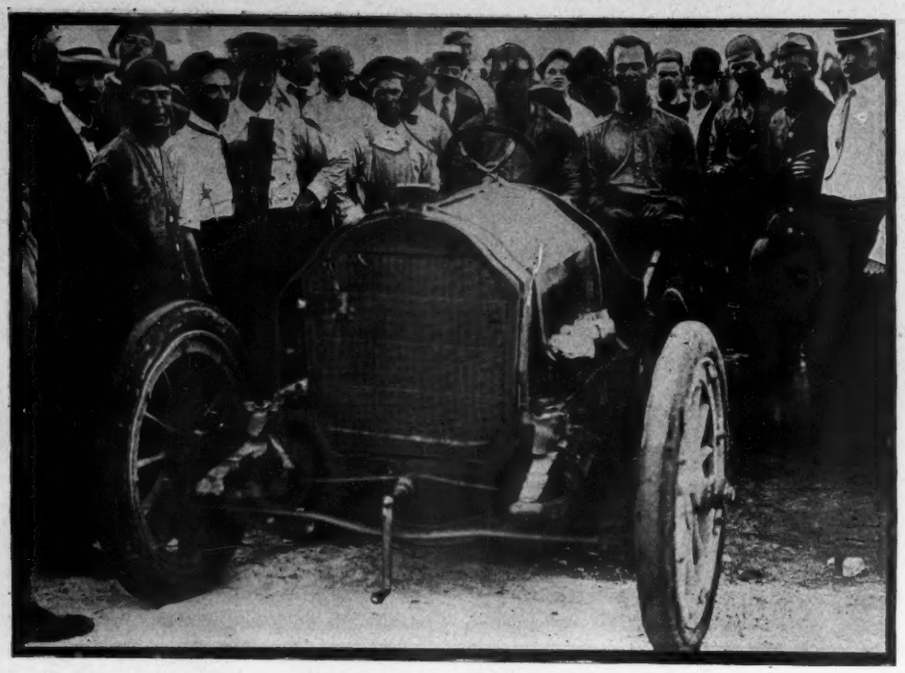
Event No. 9, 50 miles, stripped chassis, 161 to 230 cubic inches piston displacement:

No.	Car	No. Cyl.	Bore and stroke	10	20	30	40	50
18	Stoddard Driver, Wright	4	3⅞x4½	12:16 1-10	23:33 7-10	34:42 3-10	46:24 1-10	59:23 1-10
19	Stoddard .. Driver, Schweitzer	4	3⅞x4½	11:34 8-10	23:40 1-10	36:19 6-10	48:25 2-10	1:00:26 7-10
31	Buick ..... Driver, Ryall	4	3¼x3¼	.....	.....	.....	.....	.....
30	Buick ..... Driver, DeWitt	4	3¼x3¼	11:33 8-10	23:49 7-8	35:20 9-10	47:16 2-10	.....
49	Velie ..... Driver, Stickney	4	x4	.....	.....	.....	.....	.....

Event No. 10, 10 miles, free-for-all:

No.	Car and driver	No. Cyl.	Bore and stroke	Time
50	Chadwick, Zengel	6	5 x6	8:23 2-10
8	National, Aitken.	6	5 x5	8:32 6-10
66	Stearns, Cameron	6	5⅜ x5⅜	.....
5	Lozier, Heina....	4	5¾ x5¼	.....
24	Fiat, De Palma..	4	5 3-5 x5 1-5	.....
27	Benz, Oldfield...	6	1-10x8	.....

Time: Five miles—No. 50, 4:17 4-10; No. 8, 4:21 1-10; No. 5, 4:28 1-10.



LYNCH IN JACKSON ON THE SCALES

INDIANAPOLIS, Ind., Aug. 21—Just when the prospects looked brightest for the successful completion of the meet, two accidents brought racing to a sudden end this afternoon and prevented a winner being evolved in the Wheeler & Schebler cup race at 300 miles. Merz in the National ran off the bank near the bleachers and the accident resulted in the killing of two spectators and the death of Kellum, Merz's mechanic. Before the horror-stricken crowd had time to recover from the effects of this Bruce Keen in a Marmon car hit a pole. His mechanic suffered a fractured skull and thereupon the officials decided to stop the race, it being evident that the drivers were greatly fatigued and that if the event went the full distance there might be more accidents. At the time the race was stopped, 235 miles, the Jackson was in the lead and seemed to have a good hold on first place. But Referee Stevens would not give it the race and in the evening, after a consultation with his fellow officials, he issued the following statement:

"Owing to the physical condition of the contestants who had been subjected to the strain of a 3-day race meet under trying climatic conditions, I deemed it to the best interests of the entrants and spectators to abandon the race, therefore I rule no race and no awards. In conclusion, however, I recommend that the management of the Indianapolis motor speedway and to the donors of the trophy that suitably engraved certificates of performance be presented to all contestants in active participation in this event at the time of its abandonment, and that they be signed by the management of the Indianapolis motor speedway, the donors and the referee."

Big Race Saturday

At the time the race was stopped Lynch in the Jackson had completed 235 miles, his time for that distance being 4:13:51 4-10. De Palma in the Fiat was second and Stillman in the plucky little Marmon third. Harroun in a Marmon and de Hymel in a Stoddard were also running—five out of eighteen starters. The race itself was replete with sensational incidents. At the very start Johnny Aitken in the National six jumped out and beat it. He soon had a good lead over his fellows, with Lytle in the Apperson being closest. There was no loafing on the part of either and it was no time before the National was among the records. The half-century showed Aitken more than 3 minutes to the good.

The first scare of the afternoon came in the twenty-fourth lap, when Lytle escaped a serious accident by his skilful driving. He had just passed the pits when a steering arm broke and left Lytle almost helpless. The car made a wild dive for the fence, but Lytle with control only over one front wheel managed to pull it away and run up the bank. He had slowed by this

SUMMARIES IN SATURDAY'S EVENTS

Event No. 12, 15 miles, free-for-all handicap:

No.	Car, driver	No. Cyl.	Bore and stroke	Time
6	National, Kincaid	4	5 x5 11-16	13:23 5-10
23	Fiat, De Palma	4	5 3-5x5 1-5	13:28
17	Marmon, Stillman	4	5 x5	14:48 3-10
30	Buick, DeWitt.	4	4½ x5	.....

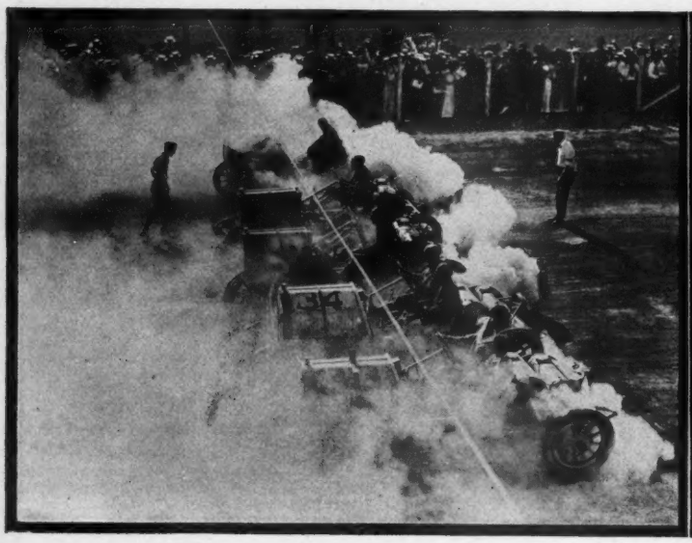
Handicaps: No. 6, 1:15; No. 24, scratch; No. 17, 1:00; No. 30, 2:15.

Event No. 13, 10-mile amateur championship:

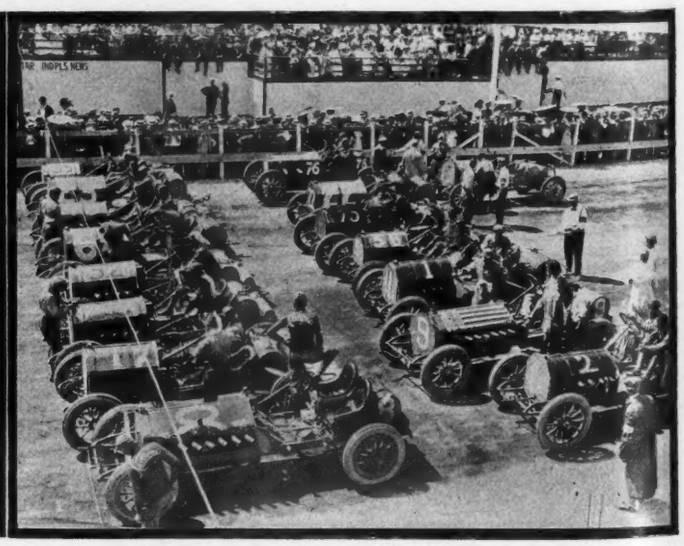
No.	Car and driver	No. Cyl.	Bore and stroke	Time
24	Fiat, Hearne	4	5 3-5x5 1-5	9:44 3-10
47	Buick, Ryall	4	.....	9:49 3-10
29	Thomas, Greiner.	6	5½ x5½	.....
66	Stearns, Cameron	6	5⅞ x5⅞	.....

Kilometer trials:

No.	Car an driver	Cyl.	Bore and stroke	Time
27	Benz, Oldfield	4	6 1-10x8	:26 2-10
26	Christie, Christie	4	.....	:28 7-10
50	Chadwick, Zengel	6	5x6	:29 9-10



THURSDAY—START OF 10-MILE EVENT



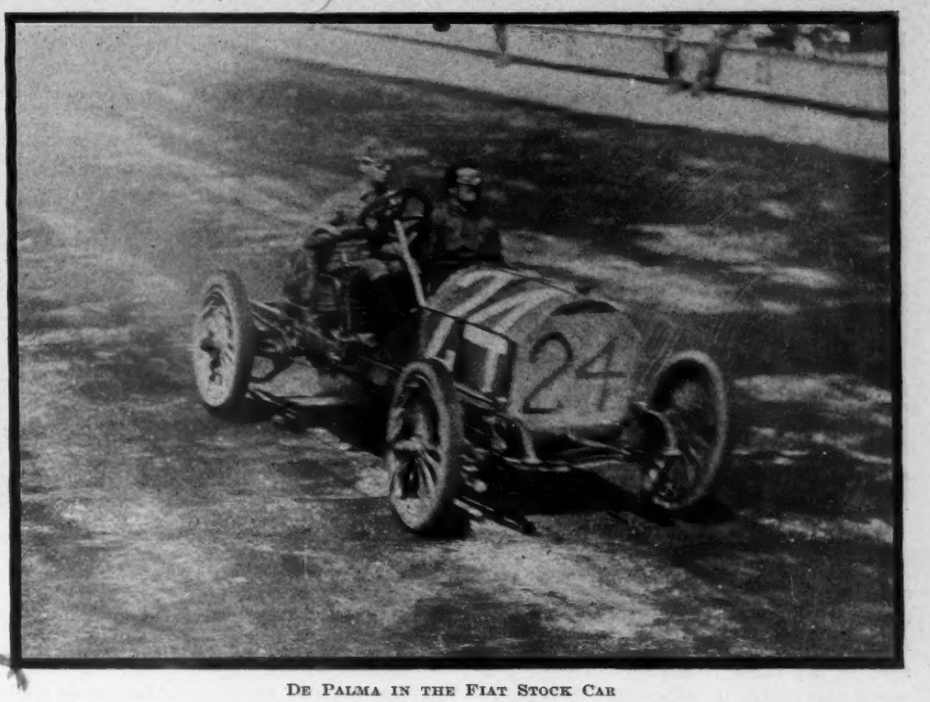
SATURDAY—START OF WHEELER & SCHEBLER RACE

Stopped by Referee

time and from the top of the bank he slowly drifted to the pole, just escaping being hit by one of the cars following him. When the bottom was reached the Apperson struck a pile of dirt, the mechanic was thrown clear and Lytle stepped out unhurt. The car had been moving so slowly that no damage was done. Lytle went to work and repaired the damage and resumed when the race had reached 175 miles. He was so far behind, though, that he hadn't a chance in the world of doing anything.

Following the Apperson incident Aitken continued to burn it and had turned the century with a new record to his credit. The National was running so well that even at this early point it seemed as if Aitken's name would be the first engraved on the $10,000 trophy. But in the very next lap a cracked cylinder developed and Aitken had to quit, leaving an opening for Burman to become the leader. The Buick star went to the front and showed first at 125 miles, but soon after he went down and out, leaving the field to Lynch in the Jackson, de Palma in the Fiat and Stillman in the Marmon.

Merz in the National four still was in the running and for a few laps after his team mate had quit he had been in front.



De Palma in the Fiat Stock Car

Trouble overtook him, though, when he had to stop in the back stretch. He stopped his engine and when he tried to start it again he discovered his storage battery was dead. He and his mechanic, Lyne, were too tired to start on the magneto and so Lyne was dispatched across the infield for a new battery. It was a long run, nearly a mile, and Lyne arrived at the pit in an exhausted condition, collapsing when he reached them, whereupon poor Kellum was delegated to take his place. Kellum had been mechanic for Aitken until the six had been forced out, but he cheerfully picked up the battery and ran across the field with it, going to his death as it afterward turned out.

Merz started to recover lost ground and was making good progress. He had passed the double century mark and had swung into the first turn. He had got half way

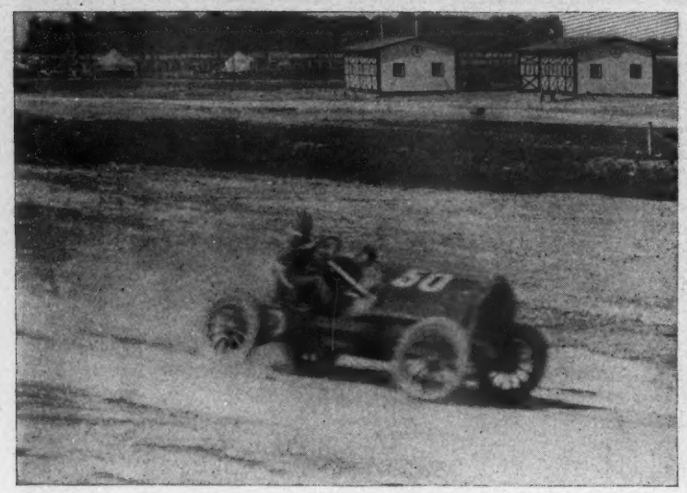
SUMMARIES IN SATURDAY'S EVENTS

Event No. 14, 25 miles, free-for-all, for Remy Brassard

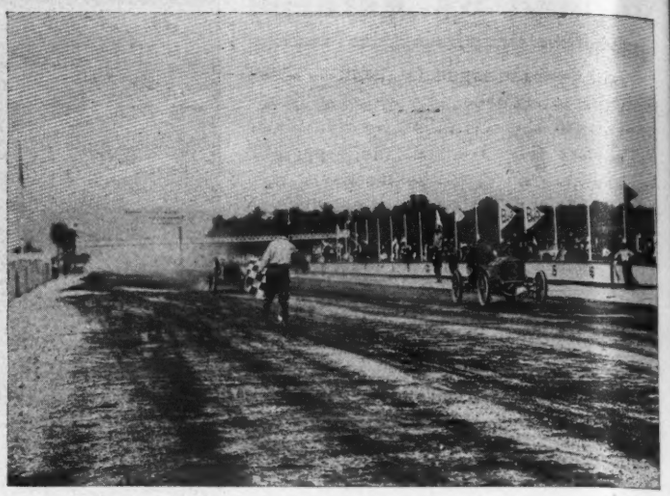
No.	Car	No. Cyl.	Bore and stroke	5 miles	10	15	20	25
27	Benz ..... Driver, Oldfield	4	6 1-10x8	4:11 3-10	8:15 9-10	12:32 4-10	16:53 8-10	21:21 7-10
24	Chadwick .. Driver, Zengel	6	5 x6	4:12 2-10	8:20	13:07 1-10	17:21 3-10	22:44 4-10
50	Fiat ..... Driver, De Palma	4	.....	4:39 7-10	8:54 8-10	13:07 6-10	18:07	23:07 8-10

TABLE OF STANDING OF CARS IN SATURDAY'S 300-MILE RACE

No.	Car	Driver	No. of Cyls.	Bore and Stroke	25 Miles	50 Miles	75 Miles	100 Miles	125 Miles	150 Miles	175 Miles	200 Miles	225 Miles	235 Miles
52	Jackson	Lynch	4	4¾x4¾	10	8	8	7	4	2-39-34.1 1	3-05-16.6 1	3-32-28.6 1	4-03-54.4 1	4-13-31.4 1
24	Fiat	DePalma	4	140 min. x 130 min.	7	5	1-13-11.6 3	1-36-19.4 3	3	2-46-14.1 2	3-09-35.7 2	2	4-05-23.5 2	.....
75	Marmon	Keene	4	4½x4½	18	12	9	9	6	2-46-38.6 3	3-20-46.2 3	3	.....	.....
58	Marmon	Harroun	4	4½x4½	16	13	12	11	10	6	6	5	.....	.....
17	Marmon	Stillman	4	5x5	13	11	10	10	8	5	5	4	.....	.....
9	National	B. Oldfield	6	5x5	15	15	13	13	9	7	8	.....	.....	.....
62	Stoddard-Dayton.	A. DeHymel	4	5¼x5¾	6	7	6	6	5	10	9	.....	.....	.....
28	Stoddard-Dayton.	Miller	4	5¼x5¾	11	10	11	12	7	4	4	.....	.....	.....
10	National	Merz	4	5x5½	5	4	4	4	2	8	7	.....	.....	.....
53	Jackson	Ellis	4	4¾x4¾	.....	17	14	14	12	9	.....	.....	.....	.....
35	Buick	Burman	4	4½x5	4	47-49.6 3	1-11-54.6 2	1-35-50.6 2	1	.....	.....	.....	.....	.....
22	Stoddard-Dayton.	Clements	4	5¼x5¾	8	6	7	8	11	.....	.....	.....	.....	.....
1	Apperson	Lytle	4	5¾x5	3	47-4.7 2	16	.....	13	.....	.....	.....	.....	.....
37	Buick	Chevrolet	4	4½x5	9	9	5	5	.....	.....	.....	.....	.....	.....
8	National	Aitken	6	5x5	21-27.6 1	44-21.2 1	1-09-34.6 1	1-31-41.9 1	.....	.....	.....	.....	.....	.....
55	Marion	Stutz	4	4¼x4½	17	16	15	.....	.....	.....	.....	.....	.....	.....
73	American	Drach	4	5¾x5½	14	14	.....	.....	.....	.....	.....	.....	.....	.....
36	Buick	Strang	4	4½x5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	Apperson	McCulla	4	5¾x5	12	.....	.....	.....	.....	.....	.....	.....	.....	.....



FRIDAY—EVENT NO. 10, CHADWICK WINS



THURSDAY—EVENT NO. 3, BOURQUE, NO. 3, WINNING

around the bend and was nearing the bleachers which are located there when a front right tire punctured. The National shot to the right and over the edge just where the bridge abutment is located. It poised for a second on the brink, then toppled over, striking a fence on which sat a row of spectators. It was a danger point and there was a huge sign there warning people to keep away, and it is stated that the police had driven them off several times. The crash of the car killed two outright, Ora Joliffe, of Trafalgar, Ind., and an unknown man. Kellum, the mechanic, was so badly injured he died soon after. Merz, though, had a lucky escape. He was caught under the car when it turned over but was not hurt, retaining presence of mind enough to turn off the power before he crawled out.

Only three other races were run and there was an attack on the kilometer record which resulted in Oldfield in the Benz going the ⅝ mile in :26 2-10. Christie did :28 7-10 and Zengel in the Chadwick :29 9-10. A remarkably fast race was run for the Remy brassard, which has been put up by the magneto manufacturer and which carries with it a salary of $75 a week as long as it is held. Oldfield went after the money and got it, leaving behind him a trail of broken records. He finished the quarter-century in 21:21 7-10, the Fiat being second in 22:44 4-10 and the Chadwick third in 23:07 8-10.

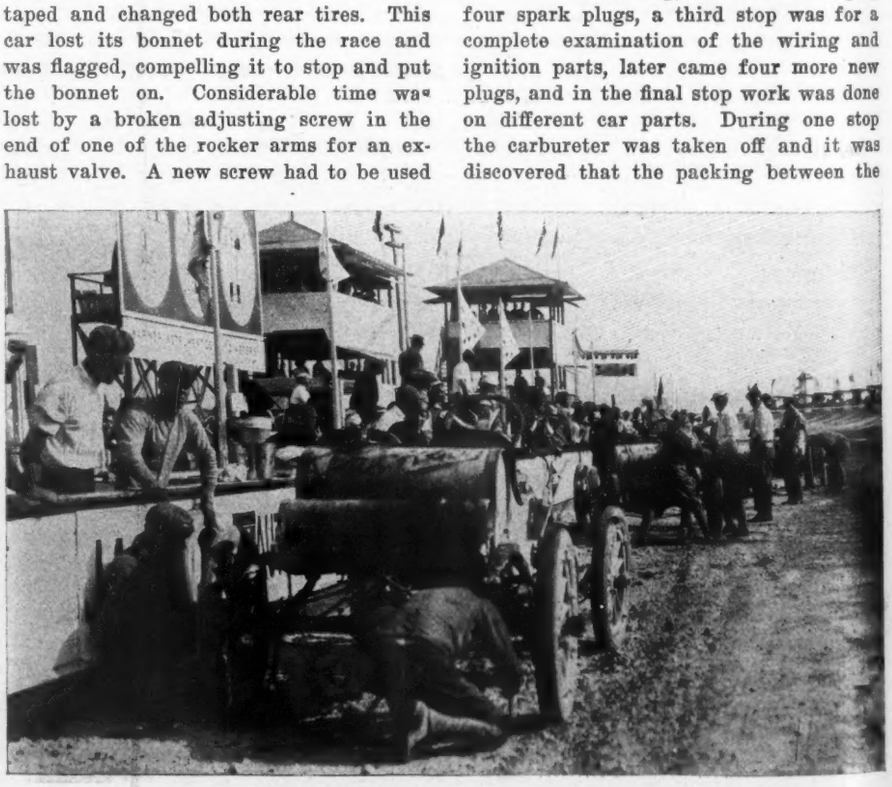
The 10-mile amateur championship brought out four starters and on the first lap A. W. Greiner, of Chicago, in a Thomas six looked the winner, but engine trouble stopped him after one round. Then Jimmy Ryall in a Buick became a factor, but on the final lap he was overhauled by Eddie Hearne, of Chicago, in a Fiat, who won handily. Cameron in a Stearns six did not finish.

Kincaid in the No. 6 National trimmed the Fiat in the 15-mile handicap, de Palma starting from scratch. It was a close race, but Kincaid's allowance was just enough to give him the victory. No. 17 Marmon was third.

That the speedway in its present condition is harder on tires than a road race over good macadam roads is borne out by the number of stops that the different cars had to make as well as the nature of the stops. Many of the cars suffered from vibration due to the terrific pace that was set and maintained over the 2.5-mile circuit. The No. 52 Jackson, which was leading when the race was called off, lost all told 13 minutes 53 seconds during the race, taking on oil and water five times, gasoline twice and changing two rear tires. No. 24 Fiat, which was running second at the finish, had a heavier time loss, with 38 minutes 40 seconds at the pits. It replenished with gasoline but once, took oil twice, added water once after the hose union between the return pipe and the radiator started to leak and had to be taped and changed both rear tires. This car lost its bonnet during the race and was flagged, compelling it to stop and put the bonnet on. Considerable time was lost by a broken adjusting screw in the end of one of the rocker arms for an exhaust valve. A new screw had to be used and difficulty was experienced inserting it.

No. 58 Marmon lost 4 minutes 30 seconds, due to changing a right rear tire and filling twice with gasoline, oil and water. This was the sum total of the work done on this car during the race. No. 75 Marmon changed both rear tires, filled twice with water and had one replenishment of gasoline and oil. The second water supply was needed due to a leak in the connecting hose in the return water pipe at the top of the radiator. His total time loss was 9 minutes 30 seconds. These cars ran with remarkable regularity.

All three of the Buicks went out of the race before it passed the half-way mark. Strang, who made such a wonderful showing in the 100-mile race, had nothing but trouble from the start. His first stop was for a new hood strap, next came changing four spark plugs, a third stop was for a complete examination of the wiring and ignition parts, later came four more new plugs, and in the final stop work was done on different car parts. During one stop the carbureter was taken off and it was discovered that the packing between the



SATURDAY—FOUR CARS AT REPAIR PITS AT ONCE IN 300-MILE RACE

THE ROW OF PRIVATE GRAND STANDS AT FIRST TURN

MAIN ENTRANCE TO SPEEDWAY—TRACK TO LEFT

magneto and the intake manifold had not been shellaced, the paper getting into the gasoline nozzle. Burman in No. 35 was dropped out by the rear cylinder casting coming loose on the crankcase and he also had a leak in the short gasoline pipe uniting with the carbureter. No. 37, driven by Chevrolet, was stopped once for oil, and withdrew from the race when the center motor bearing gave way.

Of the three Nationals, two had trouble with cracked cylinder castings and the third, No. 10, was put out through the unfortunate accident. Aitken, in No. 8, led until he had to drop out, due to a cracked waterjacket, but up to this time had made but one stop, that at the end of 75 miles to change two rear tires, which was done in 2 minutes 57 seconds. The only trouble Oldfield, driving No. 9, had was due to cracked waterjackets, and thereafter he had to stop half a dozen times to take on water until he finally withdrew from the race. He did not make a tire change throughout the race.

No. 10 experienced trouble when on the back stretch, when the battery went dead and it was necessary for the mechanic to get a fresh one from the pits at the grand stand. It was at this occasion when mechanics were changed and not many laps afterward the fatality occurred. No. 22 Stoddard stopped four times to fill with oil, the last stop calling for repairs, making total loss of 15 minutes 50 seconds. After breaking of water pipe the car withdrew. Miller, driving No. 23 Stoddard, had trouble with tar getting in his eyes, losing all told 8 minutes this way. Six stops for oil were made and four rear tires were changed. No. 62 Stoddard had difficulties with ignition and made five stops to replenish with oil and water.

RECORDS BROKEN FRIDAY

(Continued from page 9.)

veloped that Barney had met with an accident in the handicap preceding in which he had driven his Old Glory National. He had had to stop in the back stretch and while cranking the motor again the hood came off and struck him in the arm, making a bad cut. This pained Barney and in the big race he was greatly handicapped. Also a footboard on the Benz had loosened and got under the clutch pedal so that Oldfield was in sad straits.

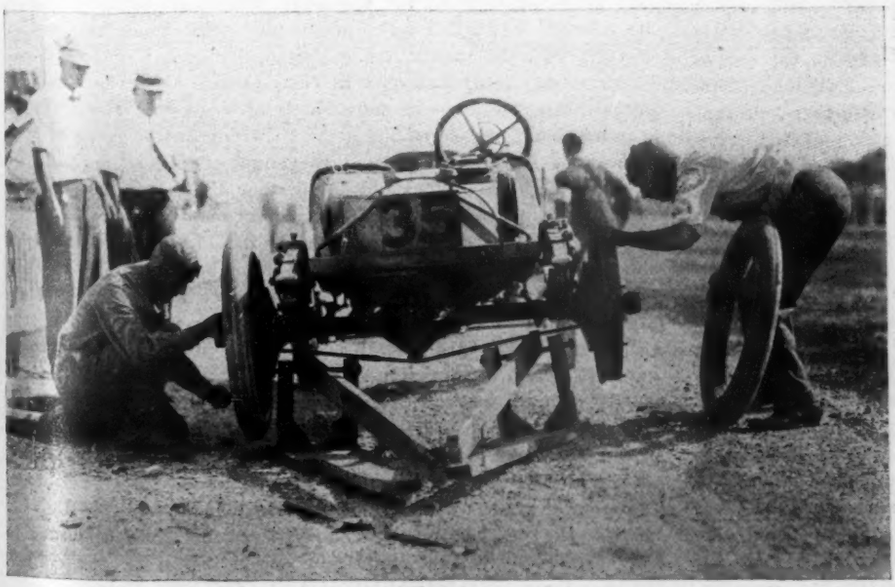
After Oldfield had been eliminated, there was nothing to it but the Chadwick, which was let out to the limit. The distance of the race was soon covered and Zengel came home about an eighth of a mile ahead of Aitken in the National, having covered the 10 miles in 8:23 2-10, which amply demonstrated the speed possibilities of the track. The Chadwick was 10 4-10 seconds ahead of the National, no other cars finishing.

Another speed feature of the afternoon was the mile trial. Yesterday Barney Oldfield in the Benz went an exhibition in :43 1-10 and today he drove against this mark.

The speed trials opened the afternoon's sport and following it came the 231-300 class race at 5 miles in which Strang and Chevrolet in Buicks had everything to themselves, third place falling to Stutz in the Marion, who, however, was some distance in the rear. Aitken in the National six again came into prominence in the 10-mile race for 301-450 class of stripped chassis in which the runner-up was Chevrolet in a Buick. De Hymel in a Stoddard was third.

Aitken followed this up with another victory in the 10-mile for cars that will run for the Wheeler & Schebler trophy tomorrow. In this he trimmed Lytle in an Apperson, having nearly 10 seconds the advantage as the tape was crossed, while Heina in a Lozier was third. In the 5-mile handicap it was a case of the National being one, two, Aitken in his six getting the decision over Merz, the finish being so close that many dispute the decision of the judges. It probably was one of the most hair-splitting decisions ever turned out at a motor meet, the timers deciding there was only 1-200 of a second between the two Nationals.

The 50-mile race shared honors with the century as one of the attractions of the afternoon, and it resolved itself into an easy victory for the Stoddard-Dayton, which took both first and second.



BURMAN MAKING CHANGE OF REAR TIRES AT PIT

Published Weekly
The CLASS JOURNAL COMPANY
1200 Michigan Avenue
CHICAGO
New York Office, 239 West 39th Street

MOTOR AGE

Subscription Rates
United States and Mexico, per year, $3.00
Other countries including Canada, $5.00

Entered as Second-Class Matter September 19, 1899 at the Postoffice at Chicago, Illinois, under Act of March 3, 1879

Suggestions and Criticisms of the Motor Speedway

THE Indianapolis motor speedway is a safe place for racing cars, if any road or beach course in America is safe for such sport. True, two lamentable fatalities marred the otherwise most successful opening of this American Brooklands, but these accidents might have happened on any straight roadway, because they both occurred on straightaways, where the track surface was the best, being as smooth and hard as possible. The National accident was due directly to a right front tire exploding on a straight stretch and at a time when the driver was hugging the outside of the track, so that when the car careened to the right there was not room enough to straighten it up before it collided with the outer fence. The track at this point is sixty feet wide. With the Borque case, something happened to the front end of the car, exactly what nobody knows, or ever will know, but the car turned towards the outside of the course, crossed a ditch eighteen inches deep, crossed over piles of loose dirt thrown out of the ditch, ran over huge tiles, to be used in the ditch, and finally upset. The ditch is dangerous—it should have been filled before the race started—but even with the ditch filled, it is questionable if the car could have been controlled, because of the trouble which sent it to the outside of the course and at which time all control of it was lost.

BOTH the American Automobile Association and the Indianapolis motor speedway officials are responsible for the troubles, in that the races were too long. No driver in a track event should be allowed to drive for more than 100 miles. If races 300 miles in length are listed, then there should be a change of drivers every hundred miles. Every one of the drivers in the long races were tired before the races were half over. This was very apparent from the grand stand. On coming down the stretch up to the first ninety or hundred miles the drivers picked their courses with the utmost delicacy, avoiding whatever bad spots there were in the track, but once past the century point, turning the car to the right or left, to avoid such, seemed to call for too much effort, and the cars came tearing down over bad spots and bouncing drivers and mechanics in the air. The same was true in the back stretch and on the curves, where two cars bumped hubs at one time towards the end of the race, but neither shut off for an instant. The drivers, in fact, because of the trouble which sent it to the outside of the course that ordinarily would have caused shutting off momentarily.

BUT there is another cause which tired out the drivers before they started in the long races: It was the unpreparedness of the manufacturers. The majority of the cars were entirely overhauled each night, and the drivers in some cases were up more than half of the night looking over the work on their cars. Added to this was the trying-out they gave their machines during the forenoons of the race days. One driver drove his car sixty-two miles on the country road Saturday morning, in order to tune it up for the 300-mile race of the afternoon. This is too much exertion for any driver. But the preliminary work of the driver went further in some instances, as not a few of them drove in one or two of the five and ten-mile races which were run off before the start of the big event. All of this work for the driver before the race should be stopped by the manufacturer; the race promoter has no control over such.

THE impression seemed to prevail among many drivers that because the races were over a speedway course, without any right-angled turns, that it would be much easier on the driver than driving a road race, with numerous turns. This did not prove to be the case. On the speedway there was no letup to the pace set, and that constant, high-tension work showed its effect very quickly on both drivers and mechanics, as well as on the machines. In road races the majority of the drivers camp on the course for weeks before the event starts, in order to become familiar with the road peculiarities, and learn the speed at which to drive different turns, all of which is good training in endurance; but at Indianapolis this preliminary training was cut to a minimum, and the majority of the drivers went into the ordeal green as far as having brought their muscles up to the point of adequately meeting the required physical strain was concerned.

THERE are many ways in which the guarding of the course can be improved to increase the human safety factor, and there are not a few changes in the A. A. A. contest rules which will add to the safety percentage. In long-distance races the driver and mechanic should not be compelled to do any work on the cars at the repair pits. All changing of tires, filling with gasoline, oil and water, should be done by two of the pit attendants, so that the driver and mechanic, every time the car stops, have an opportunity to rest up, and get a drink or something to eat, if necessary. The present rules make it imperative for the driver and mechanic to do all the work, which is wrong, because both are tired, and often the heavy work of changing tires, or lifting big cans of gasoline, to pour the contents into the tank, is almost more than they can do.

AT the Indianapolis motor speedway spectators should not be allowed to stand in the paddock space in front of the grand stand. The grand stand is ideally located back almost 100 feet from the edge of the speedway track, but when spectators are allowed to fill this space and stand at the fence at the edge of the track, the danger line is passed, and such practices should be stopped. The repair pits in their present condition are dangerous, in that they are mere shells of wood and two by four-inch scantling, which, should a car go wrong on the home stretch, would not in any wise afford the slightest protection to those in them. These pits should be further back from the course, leaving a clear line of demarkation between the course proper and the side course in front of the pits. In front of the pits should be a cement wall or a stout timber wall of sufficient strength to glance off a car coming towards them. The private grand stands as at present located—close to the outside of the track at the first turn—are in a dangerous place should anything go wrong with the steering parts of a car at this point. If the stands were raised, the danger would be removed, but otherwise they would have to be shifted further back from the track. Where the track is not banked at the outside, as on the straightaways, the outer fence should be moved twenty feet back from the edge of the course, as it is in some places now, thus leaving a wide, neutral zone on which a driver would have a chance to get control of his car if for any reason it ran off the course. At the inside of the track there is no fence much of the way, but where there is one it should be removed, if possible.

SPEEDWAY RACES MAKE NEW RECORD TABLE

WITH the inauguration of the Indianapolis speedway there came a new era in motor racing in America. Heretofore attacks made on Father Time in this country have taken place either on the road where standard marks are seldom taken into consideration; on the beaches or on 1-mile circular tracks which have been used for horseracing. England has her magnificent Brooklands, a 2¾-mile oval, where it is nothing unusual for cars to have to go better than 90 miles an hour to win the big races, while here in the United States the enthusiasts who have supported track events have had to content themselves with watching the comparatively weak efforts of the cars on tracks that are ill-suited for such high speeds and where a mile a minute has been something over which to rave. Now along comes Indianapolis with its offerings and it is a grateful relief, while Atlanta is rushing along a 2-mile speedway.

Indianapolis resulted in a general shattering of the old circular track records, despite the fact that the surface was not in the best of condition. Still, not one of the standard distances escapes a slash, and even one of the Ormond marks was cut, the 150-mile. It is to be regretted that the timers at the speedway did not keep tab on more than the three leaders at the timing posts, else the speedway record crop might have been even larger than it was. Still, thirty-eight times old Father Time suffered.

The clockers caught the times of seventeen cars at 5 miles and of these six of them broke the record. At 10 miles there were seventeen timed and five beat the old mark; at 25 miles five out of ten beat it; at 50 miles seven out of eleven; at 100 nine out of nine; at 200 four out of four. Eight makes of cars figure in the list of successful opponents of the old gentleman with the scythe. The Buick is there eleven times; the National eight; the Chadwick and Benz five; the Fiat and Jackson three each, and the Marmon and Stoddard-Dayton one each.

At 5 miles the record was made in the Remy brassard race, in which Oldfield cut also the 25-mile. The 50-mile record was out such a hot pace for the Chadwick. Oldfield also set the 10-mile record in this and made in the Wheeler & Schebler race at 250 miles, while the best century time was registered in the same event. The Prest-O-Lite trophy race produced the double century record with 3:24:13 4/10, as against 3:32:28 6/10 in the Wheeler & Schebler.

SPEEDWAY ROLL OF HONOR.

The following cars broke the existing circular 1-mile track records at Indianapolis:

1 Mile

Car and driver.	Time.
Benz, Oldfield	:43 1-10
Benz, Oldfield	:43 1-10

Old record, :51, by de Palma, Fiat, made at St. Paul, September 5, 1908.

5 Miles

Benz, Oldfield	4:11 3-10
Chadwick, Zengel	4:12 2-10
Chadwick, Zengel	4:17 4-10
National, Aitken	4:21 1-10
National, Aitken	4:25
National, Merz	4:25

Old record, 4:26, by de Palma, Fiat, made at Providence, R. I., October 10, 1908.

10 Miles

Benz, Oldfield	8:15 9-10
Chadwick, Zengel	8:20
Chadwick, Zengel	8:23 2-10
National, Aitken	8:32 6-10
Fiat, de Palma	9:08 1-10

Old record, 9:12 3-5, by Oldfield, Peerless, made at Fresno, Cal., October 29, 1904.

25 Miles

Benz, Oldfield	21:21 7-10
National, Aitken	21:27 6-10
Fiat, de Palma	22:44 4-5
Chadwick, Zengel	23:07 8-10
Buick, Strang	23:20 1-10

Old record, 23:35, by de Palma, Fiat, made at Boston, June 17, 1909.

50 Miles

National, Aitken	44:21 2-10
Buick, Strang	46:04 6-10
Buick, Chevrolet	46:54
Apperson, Lytle	44:21 2-10
Buick, Burman	47:05 5-10
Buick, Burman	47:49 6-10
National, Kincaid	48:05 8-10

Old record, 48:40 1-5, by Oldfield, Peerless, made at Fresno, Cal., December 13, 1904.

100 Miles

National, Aitken	1:31:41 9-10
Buick, Chevrolet	1:32:18 9-10
Buick, Strang	1:32:48 5-10
Buick, Burman	1:32:48 5-10
Buick, Burman	1:35:50 6-10
Fiat, de Palma	1:36:19 4-10
Jackson, Ellis	1:37:31 5-10
National, Merz	1:38:11 7-10
Buick, De Witt	1:41:32 3-10
Marmon, Harroun	1:42:37 6-10

Old record, 1:44:00, by Burman, Buick, made at Columbus, O., July 3, 1909.

200 Miles

Buick, Burman	3:24:13 4-10
Jackson, Ellis	3:28:47 9-10
Jackson, Lynch	3:32:28 6-10
Stoddard-Dayton, Clemens	3:52:04 5-10

Old record, 4:03:56, by Vaughan, Decauville, made at Empire City, June 24, 1905.

KANSAS TOUR ROUTE BLAZED

Kansas City, Mo., Aug. 19—The second annual reliability tour of the Automobile Club of Kansas City for the Kansas City Star trophies is to be 768.3 miles in length and will pass through 101 cities and towns, according to the log of the Studebaker-Garford pathfinder, which has returned from laying out the route. The tour, which is to start from Kansas City September 20, will occupy 5 days. Three of those days are to be long runs, while the other 2 are much shorter. On the first day the cars will run from here to Junction City, Kan., 159 miles; the second day's run is north to Lincoln, Neb., 182 miles; the third day to Omaha, 123 miles; the fourth day to St. Joseph, Mo., 179 miles, and the fifth day from St. Joseph to Kansas City, 125 miles. The roads on the route are in the main excellent. They are all well traveled country roads, with level straightaways 10 and 15 miles in length with scarcely a bump to break the speed. As an evidence of the fine character of the roads, it is recorded that the pathfinder car made 850 miles altogether on its journey and returned to Kansas City without a puncture or a blowout, having the original Kansas City air in all four tires. Indeed, the tires showed little evidence of wear. There are no bad hills or stony places on the route. The entry list opened Monday. Class A, or the dealers' division, began to fill at once and by noon Monday there were eighteen entries in. In all probability there will be in excess of fifty cars entered in this division. Class B, or the private owners' division, is expected to show an entry list of about twenty cars. The lists close September 10, when the entrants will draw lots for position in the tour. On each day's run the class B cars will leave first in the morning on account of a slower running schedule. The class A cars are to be divided in four divisions—cars listing at $3,500 and above, cars listing at $2,000 to $3,499, cars listing at $1,000 to $2,000. The first division, according to the rules adopted by the dealers' association, is to have a daily running schedule of 20 miles an hour; the second division 19 miles and hour, the third 18 miles an hour, and the fourth 17 miles an hour. The class B cars are to have a minimum schedule of 15 miles an hour. The rules adopted for the tour are similar to the Glidden rules except that in some respects they are more stiff. For instance, there is to be penalization for adjustments of carbureters, brakes and clutches, and the engine must not be stopped between controls except for tire replacements.

COMPARISON OF THREE SETS OF RECORDS—SPEEDWAY, TRACK AND BEACH

SPEEDWAY

Mile	Car	Driver	Time
1	Benz	Oldfield	:43 1-10
5	Benz	Oldfield	4:11 3-10
10	Benz	Oldfield	8:15 9-10
25	Benz	Oldfield	21:21 7-10
50	National	Aitken	44:31 2-10
100	National	Aitken	1:31:41 9-10
150	Buick	Burman	2:27:32 8-10
200	Buick	Burman	3:24:13 4-10
250	Buick	Burman	4:38:57 4-5

TRACK

Car and driver	Time
Fiat, de Palma	:51
Fiat, de Palma	4:26
Peerless, Oldfield	9:12 3-5
Fiat, de Palma	23:35
Peerless, Oldfield	48:40 1-5
Buick, Burman	1:44:00
Vaughan, Decauville	4:03:56

ORMOND

Car and driver	Time
Darracq, Chevrolet	:30 3-5
Darracq, Hemery	2:34
Benz, Brown	5:14 2-5
De Dietrich, Fletcher	38:51
Renault, Bernin	1:12:56 1-5
Benz, Bergdoll	2:40:33
Fiat, Cedrino	3:16:48 2-5

LOWELL MEET AROUSING GREAT INTEREST

LOWELL, MASS., Aug. 21—With the approach of the national stock chassis competition of the American Automobile Association which will take place here on September 6, 7 and 8, even greater interest than has heretofore been shown is manifesting itself on all sides and the 3 days of motoring sport under the auspices of the Lowell Automobile Club promises to be one of the most important events in motoring history. The latest entry is a 50-horsepower stock Simplex owned by Daniel Shea, who is endeavoring to secure the services of Robert Hilliard, the driver of the Lancia car in the Savannah races last year. Among the recent entries are three Maxwells, one Moon to be driven by Harold Brinker, one Allen-Kingston, a Columbia, an Isotta to be driven by Al Poole, a Mercedes, a Bergdoll and a second Apperson. Besides these there will be an American Locomotive car to be driven by H. F. Grant, and a string of Knoxes, Stoddard-Daytons, Benzes, Rainiers and others. The list of foreign cars has recently been augmented by a second Renault, Charles Basle to be the pilot. Mrs. Cuneo has entered her Knox Giant to be driven by Louis Disbrow, and the mile straightaway competition and time trials will be enlivened by Walter Christie in his new 135-horsepower front-wheel drive racer. It is hardly likely that Denison will drive the Knox because of the death of his racing partner, W. A. Bourque, who was killed at Indianapolis last week.

At the present time the Lowell Automobile Club is hard at work getting the course into condition for the 3 big days of racing. The grand stand and pontoon bridge across the Merrimac river are being rapidly completed and the course is already in splendid shape.

The opening event on Labor day will be the light car sweepstakes. On the following day will take place the 1-mile straightaway competition in which specially-built racing machines will compete in the free-for-all event, and on Wednesday, the 8th, there will be a grand finale—a 318-mile race for heavy cars with a piston displacement of between 451 and 600 cubic inches, which will bring out a big field.

Last year, with 80,000 spectators along the course, the 300 patrol guards succeeded in preventing accidents and keeping the course well-policed. During the big events this coming September the number of guards has been increased to 500, of whom 400 will be members of the local militia. Four companies, C, G, M and K, of the local regiment, will each supply 125 picked men under command of their respective captains, and the rest of the patrol will be made up of Lowell city police. A crowd of probably 100,000 to 150,000 people will witness the events, according to a most conservative estimate.

As is natural under the circumstances, the prices for lodging and meals have already begun to rise, and visitors to the Lowell race carnival are advised to arrange for advance bookings with the hotels and boarding houses at once. The local committee in charge of accommodations has obtained a list of more than 500 rooms for visitors, and additional accommodations are being secured daily.

Chairman Hower and the rest of the A. A. A. officials are most enthusiastic over the outlook for a successful meet and predict that Lowell will be proud of the work of its energetic club. It is expected most of the officials will arrive here the latter part of next week.

TWO CUPS FOR FRANKLIN

Omaha, Neb., Aug. 23—The biggest endurance run in Nebraska was brought to a successful close Thursday evening, when thirty cars pulled into Omaha ahead of schedule time in competition for the cup offered by the World-Herald and the cup of the Omaha Automobile Club, under whose auspices the race was run. Out of the thirty starters, all made the entire trip of 400 miles in 2 days except three, all of which were damaged by running into a blind hole. The winner of the two prizes, the World-Herald and the club cups, was Guy L. Smith in a Franklin. The World-Herald trophy was offered to the stock car from Iowa or Nebraska coming in with the highest score and club cup was offered for the car belonging to a club member having the highest score. As Mr. Smith is a member of the club, he walked away with both the big prizes with a score of 995½. The winners of the various class prizes were as follows: Class A—R. R. Kimball, Stevens-Duryea, Omaha, score 992. Class B—E. Mockett, Lincoln, Rambler, score 994½. Class C—H. E. Silles, Lincoln, Buick, 995. Class D—R. R. Kimball, Stanley steamer, score 985. The cars left Omaha on the morning of Wednesday and stopped the first night at Hastings, Neb., returning the next day by way of Louisville, Neb., and Lincoln. Shortly after they left Fremont, Brick P. Kuhn's Duer delivery wagon, in which he was making the run, struck a blind hole and broke a rear wheel. Mr. Kuhn made a deal with the village blacksmith for a buggy wheel at a price of 25 cents, with which he replaced the broken wheel. He made the distance of 40 miles back to Omaha under his own power.

MUNSEY TOUR OFFICIALS

Washington, D. C., Aug. 21—The selection of Frank H. Trego, of Chicago, as chairman and referee of the Frank A. Munsey reliability contest from this city to Boston and return, September 21-29, has added new interest to this eastern event. In addition to Mr. Trego, the following officials have been selected: Technical committee, Mr. Trego, chairman; Dr. J. R. Overpeck, Philadelphia; Jesse L. Cassard, Jr., Baltimore; chief observer and starter, Richard P. Covert, Washington; chief checker, Arthur G. Newmyer, Washington; pilot, James R. Quirk, Washington; physician, Dr. J. Ernest Mitchell, Washington. The entry list is receiving additions with every succeeding day, the latest entrants being as follows: Acme, entered by N. S. H. Sanders, Boston; Cameron, by Cameron Car Co., Beverly, Mass.; Jackson, by E. P. Blake, Boston; Hupmobile, by Joseph Weisenfeld, Baltimore; Winton, by George F. Whiting, Baltimore, and American Simplex, by Simplex Motor Car Co., Mishawaka, Ind. The pathfinders, who are nearing the end of their journey, have sent back word that their reception all along the route has been most cordial and that motor clubs, municipal and trade bodies are preparing lavish entertainments for the Munseyites when they pass through their respective towns.

FAIRMOUNT PARK OUTLOOK

Philadelphia, Pa., Aug. 23—With the mayor, his directors, the park commission and a big committee of prominent citizens all actively interested and working on the details of preparation, the Quaker City Motor Club's first annual renewal of the Fairmount park 200-mile stock chassis race, to be run October 9 next, is already far advanced toward that unqualified success which its promoters are determined it must be. The charitable feature of the affair, by which four of the most deserving local charities are to profit from the proceeds, has developed far beyond the hopes of even the most sanguine of the club's workers. Grand stand boxes will be auctioned off a few days before the race; grand stand seats will be on sale at several downtown points 2 weeks in advance, as will the parking spaces at the numerous vantage points along the 8-mile course. Meanwhile, relieved of the minutiae of the preparations for accommodating the public, the Q. C. M. C. race committee is devoting its entire energies to the race proper. As a result of the committee's work the local house of MacDonald & Campbell, through its manager, Arthur T. Stewart, has donated a massive silver cup valued at $1,000, which will go outright to the winning car along with the $2,500 cold cash to which the victor is entitled. Other prizes will also be announced later.

The main grand stand, as last year, will be erected along the south concourse, in front of memorial hall, all the plans having been donated by Philip H. Johnson, a local architect. Chief Engineer and Park Superintendent Vogdes has taken charge of the task of gradually getting the entire 8 miles of the course in first-class condition by the day of the race, with special efforts towards minimizing the dust nuisance.

There are now a sufficient number of actual entries, assurances of entries or in-

quiries to put the committee at ease in this respect. The following actual entries are announced, others on hand being withheld until the entrance fee is received:

Car and driver	Cyl.	H.P.	Bore and stroke
Acme, Leinau	6	45	4 5-8 x5
Palmer-Singer, Wallace, Jr.	6	60	.....
Simplex, Betz or Compte	6	90	6 1-10x5¾
Apperson Jackrabbit, Lytle	4	50	5¾ x5
Kline-Kar	6	40	5 1-16x5¼
Lozier	6	50	4 5-8 x5½

Arrangements will be made, as last year, for practice on the course for at least a week previous to the race. The circuit will be thrown open to contestants from daylight till 8 a. m., during which period all crossings will be guarded and necessary precautions taken to prevent accidents.

WHY MOLINE PROTESTED

New York, Aug. 23—After refraining from a discussion of the subject for the past few weeks, W. H. Van Der Voort, president of the Moline Automobile Co., has consented to tell the facts regarding his protest against awarding the Hower trophy to the Pierce car in the recent Glidden tour. Mr. Van Der Voort does not wish it to be thought that his protest was merely on the matter of carrying a tail light, and in his statement he explains where in his judgment a proper enforcement of the rules would have given the Hower trophy to the Moline. Mr. Van Der Voort's point is that the Pierce car No. 108 bent its lamp bracket and smashed its tail light, but was not penalized and did not carry the lamp for a part of the tour. If it had done so there is every reason to believe that it would have suffered just as did Pierce car No. 109 competing for the Hower trophy which had its lamp bracket broken, carrying off the tool box and entailing penalties that if applied in the Hower class would have made the Moline the winner. Mr. Van Der Voort says:

"I dislike very much to be involved in a protest of any sort, but many of the contestants in the tour almost demanded it and I think my interest in the Moline and in fair play warrants it. Feeling that the text of my protest against the finding of the technical committee in the final inspection of the Glidden tour cars at Kansas City should emanate from the office of the chairman, Mr. Hower, I have until this time refrained from giving out same.

"Noting, however, that an erroneous report has gone out to the effect that Moline car 101 was protesting the decision on the grounds of Pierce car 108 not carrying a tail light, we feel that this impression should be corrected. Pierce car 108 did carry its tail light, and my protest is based upon the fact that this tail lamp was completely demolished and the bracket considerably bent. Penalties were provided for deterioration and according to the rules car 108 should have been penalized to the extent of the price of a new lamp and the labor required to straighten the tail lamp bracket. Moline car 101 was required to light its oil lamps, proving condition. This would have been impossible with car 108, as the tail lamp was entirely inoperative. On the basis of material and labor in repairing bracket, and replacing lamp, it would alter the final score in my favor.

"I have no criticism whatever as to the findings of the committee upon penalties which were imposed upon Moline entry 101, and while the crushing of the tail lamp and the bending of its bracket may appear trifling, I feel that the tightening of three spring clip nuts, and the furnishing of one ¼ by 1-inch cap screw and one ⅜ by 1-inch step bolt, upon which our penalties were levied, are, from the operative standpoint, of very much less importance.

"In the case of the protest against the perfect-score Glidden car, the public has been led to believe that this was based upon the technical fact that the car did not carry its tail lamp over a portion of the tour. While this is true, and under the rules should have been penalized, back of it all lies the fact that these lamps were purposely removed in order to prevent the breaking off of the bracket and the tool box, as happened to Pierce car 109 during the tour. As it is only fair to assume that had the tail lamp been left on the two touring cars, they would both have suffered the same fate as befell the two roadsters."

Cheyenne's New Track Produces Fast Time

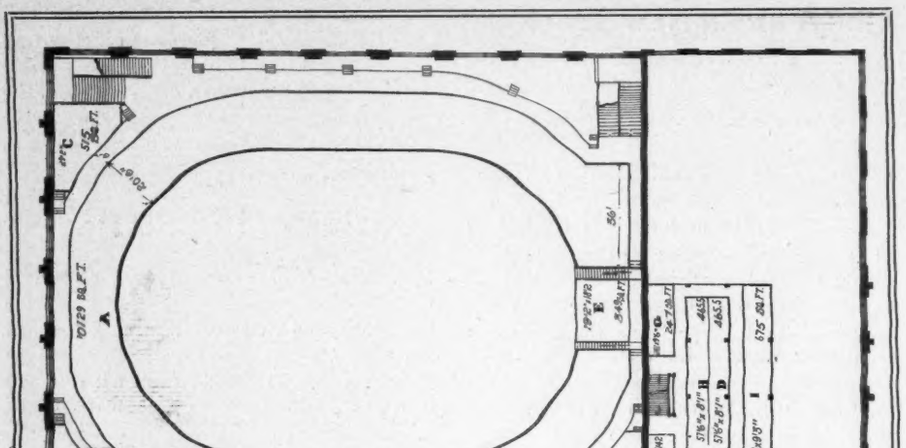
Cheyenne, Wyo., Aug. 17—The track record for 200 miles was broken at the big meet held at Frontier park in this city today, when the Oldsmobile, driven by Martin Fletcher, of Denver, covered the distance at the fine new circular track here in 3 hours 39 minutes 47 seconds. The average speed was between 58 and 59 miles per hour, and not once during the long run did the car leave the track for repairs or slacken its terrific speed. In the 25-mile free-for-all the Renault, driven by Charles Basle, came in winner, time 25:17. The first race meet held in this city under the auspices of the Cheyenne Motor Club was a success. The track was in splendid condition and grew even better as the races progressed. Thousands of spectators witnessed the races and enthusiasts from a number of states were warm in their praise of the speed possibilities of the track. Fletcher is accredited by the Cheyenne Motor Club officials with making a new record on a single 4-mile lap when in the thirty-fourth circuit he clipped it off in 3 minutes 40 seconds. There were seven cars entered in the 200-mile free-for-all, and three finished, the Oldsmobile, the Renault and the Marmon. A Buick made a spectacular run for sixteen laps, when it was down for repairs. The Colburn thirty and Colburn forty suffered disasters, one going into a ditch and the other breaking its steering gear. The Moon car, driven by Harold Brinker, of Denver, made a splendid run and held second place for twelve laps, until a hole in its gasoline tank put it out. The mechanician in one of the ditched cars was injured, but not seriously. The races were pulled off according to A. A. A. rules.

BEANS FOR CONFETTI

Minneapolis, Minn., Aug. 23—The annual tour of the Winnipeg Automobile Club brought the motorists to Minneapolis last week, ten cars in all making the run via Grand Forks and Fargo, St. Cloud to Minneapolis. Pathfinder McLeod, who has held the position for several years, has a unique method of marking the course. A funnel is placed through the footboard of the car, just inside the left front wheel and plain, ordinary white beans are used instead of confetti. These show plainly and are especially good at night, it has been found. All the cars came through in splendid style and fast time was made.

TAFT NOT SPEED-MAD

Beverly, Mass., Aug. 21—If anyone believes that President Taft has got the speed craze since he became a motorist they want to get it out of their heads at once. And if there are any stories printed anywhere that he goes a mile a minute over the fine highways of Massachusetts they do not want to believe it. His cars are capable of that speed, to be sure, but the president believes in the laws, and the Massachusett law says the limit is 20 miles an hour. The president has received several letters sent from people urging him to be careful, but this was brought about by the story sent out relative to the motor accident in which young Charlie Taft figured. That was the youngster's own fault, but it was not serious. In his rides around the north shore, which, by the way, are not so very numerous, because the president likes to play golf most of the day, and the other hours are taken up by business, he just sails along about 20 miles an hour and the other motorists pass him by the score. He has ordered his drivers to stick to the 20-mile schedule and they obey orders. When the president is not in the cars, however, and the other officials like Captain Butt and Secretary Carpenter get going on some errand the chauffeurs let the machines out in good style. The fastest drive the president had along the north shore was the morning he was taken from here to Boston to get an early train for one of his trips to Vermont. Then the car whizzed all the way, making the run to Boston in a few minutes over an hour, the metropolitan park police leading the way to prevent a hold-up. At times the car was going at 45 miles, but as the roads were smooth and free of traffic there was no danger. President Taft enjoyed the speed, and he is not afraid of traveling fast, but he believes that when it is unnecessary there is no need of jeopardizing himself.



MEZZANINE FLOOR OF AUDITORIUM-ARMORY AT ATLANTA

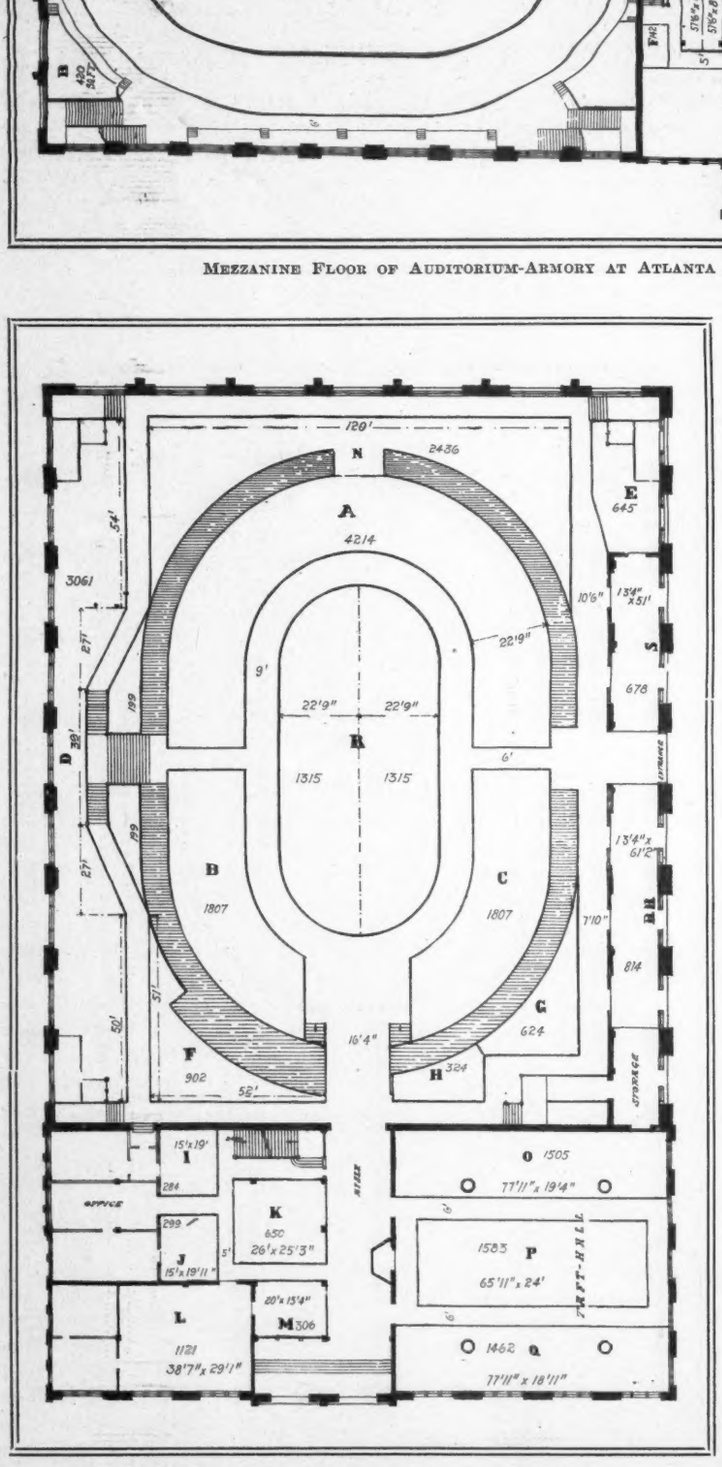


DIAGRAM OF MAIN FLOOR OF AUDITORIUM-ARMORY

Atlanta's Show

ATLANTA, GA., Aug. 24—Applications for space and diagrams of the Atlanta national show, November 6 to 13, 1909, under the management of Samuel A. Miles, general manager of the National Association of Automobile Manufacturers, and Alfred Reeves, general manager of the American Motor Car Manufacturers' Association, have been mailed to all makers of motor cars and accessories. The southern show will be held in the Auditorium-Armory and by the removal of various partitions, gives the management 65,000 square feet of floor space. Applications for space to be considered in the first allotment must be received at the headquarters of the National Association of Automobile Manufacturers, 7 East Forty-second street, New York, by Saturday, September 4, 1909. No application after that date will be considered until all applicants up to that time have been taken care of. The first allotment of space will take place at the office of the N. A. A. M. at 3 o'clock Wednesday, September 8, 1909.

The Auditorium-Armory, the building in which the exhibition will be held, is one of the largest exhibition buildings in the south. It is owned by the city of Atlanta and since its erection has been used for some of the largest conventions held in the south. During the show the new speedway now being constructed will be opened, together with endurance contests through the various sections of Georgia with prizes for the best stretches of road and a reliability trip from New York to this enterprising southern city.

Working in conjunction with Messrs. Miles and Reeves are such well-known people as Asa G. Candler, president of the Atlanta Chamber of Commerce; John S. Cohen, Clark Howell, E. W. Gans, S. C. Dobbs, C. R. Ryan, E. M. Hanson, J. T. Fitten and others.

The price of all space is 50 cents per square foot. This price includes suitable floor covering, dividing railings, signs, sign hanging, wiring for current if electric signs are used, one desk and two chairs for each space, and all necessary decorations, police, watchmen and janitor service. The price does not include wiring for motors or any item except those above enumerated. The equipment will not become the property of the exhibitors. The management will so prepare the spaces that no attention on the part of the exhibitor will be necessary, except to place his exhibit in position. No decoration, electric lighting, or furniture or other material likely to destroy the uniformity of the exhibition, will be permitted to be used. No obstruction may be placed between or in spaces below the signs.

Signs will consist of the names of space-occupants only, except that in case of the plan of decoration permits, the names of cars exhibited will be used. No "sold" or other signs, except those provided by the management, will be permitted. An exhibitor may place upon a car a card indicating its price, horsepower and name, provided the card be of uniform size, design and color, adopted by the management and furnished to any exhibitor at a uniform price, by the official sign maker.

Goods will be received only after 8 a. m. on Thursday, November 4. Goods on which there are express or freight charges will not be permitted to leave the store room until such charges have been paid. The management will not be responsible for loss of or damage to goods consigned to its care. Exhibits will be placed in the stands at the expense of the management. The receiving room will be closed promptly at 1 p. m. on the opening day, and at 10 a. m. daily thereafter.

Diagrams Out

Goods arriving at later hours will not be received until the following morning.

No lessee can assign, sublet or apportion the whole or any part of the space allotted, nor exhibit, nor permit anyone else to exhibit therein any other goods than those manufactured by the lessee in the regular course of business, nor exhibit goods made by any person, firm or company who or which has exhibited since September 1, 1904, at any show not sanctioned by the N. A. A. M.

Jobbers and dealers may, however, exhibit goods made by houses regularly represented by them and listed in accordance with these rules, provided they have not transgressed the rule referred to in the preceding paragraph. Every jobber, agent, retailer or other person other than a manufacturer, who applies for space, must file with the application a complete list of all manufacturers whose goods he will exhibit. No other goods will be permitted to be exhibited in his space.

The available accessories space, or so much of it as may be required, has been assigned to the Motor and Accessories Manufacturers, which will allot space to its members as it sees fit.

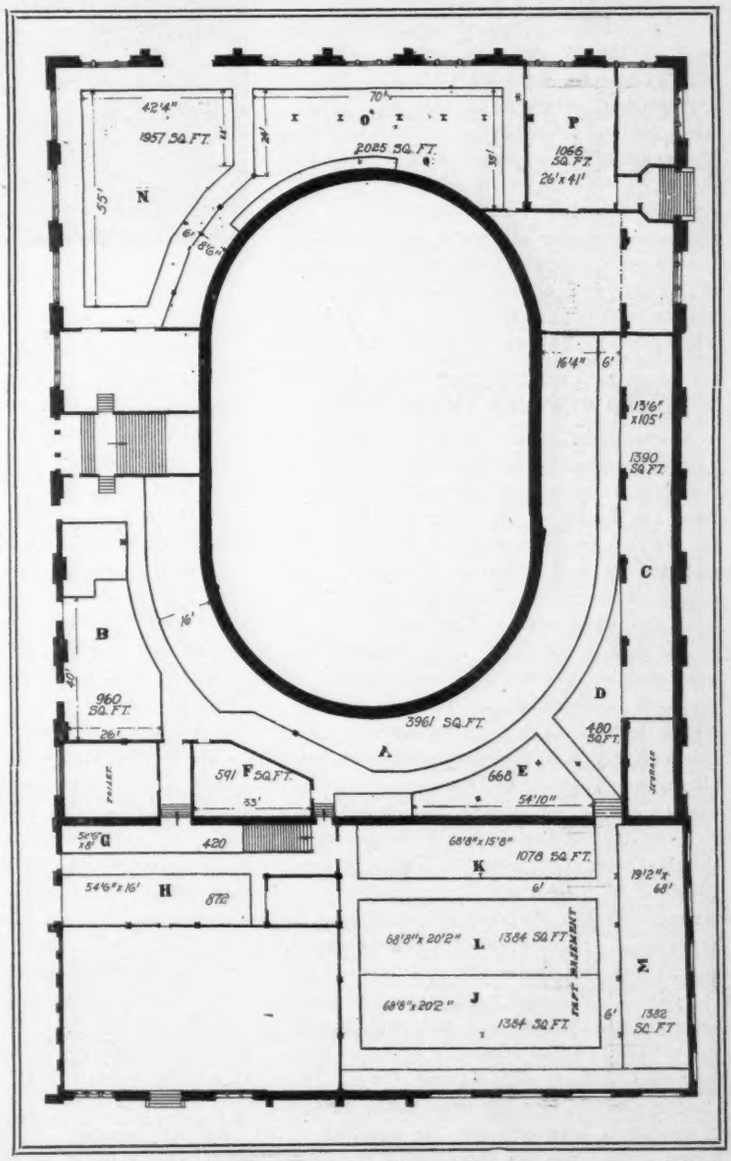
Should any space remain, applicants will be divided into classes, according to the number of earlier shows, held under the auspices of the National Association of Automobile Manufacturers, Inc., at which they have exhibited. Those who have exhibited at the largest number will be given first choice, and so on. In the event of a conflict between two or more members of the same class the order of allotment will be decided by lot. The managers reserve the right to determine the amount of space to which an applicant is entitled.

Diagram Showing How the Atlanta Speedway Is Laid Out

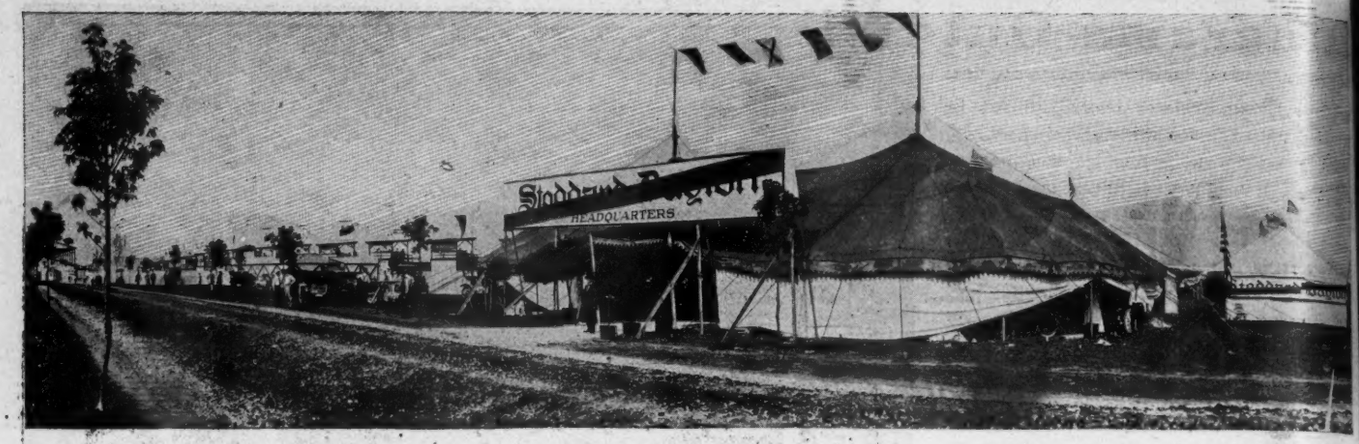
Progress of Atlanta Speedway

Atlanta, Ga., Aug. 23.—Great progress is being made on the new speedway which is being built by the Atlanta Automobile Association, of which Asa G. Candler, Jr., is president and Edward M. Durant secretary. It is estimated the cost of the track will be $300,000. Its size is 2 miles. The home stretch is 100 feet wide, the back stretch and curves 60 feet, the curves are banked 10 feet and have a radius of 880 feet. The surface is of clay, sand and gravel, with an asphalt binder, while the grounds can seat 40,000 people. The track is 8 miles from Atlanta and it is planned to have the first races November 9 to 13.

The city of Atlanta is going to be asked to stand sponsor for the big $5,000 trophy that is going to the winner of the main event of the races in November. What is more, the people of Atlanta are going to be asked to take part in the presentation. This is all to be done at the request of the Atlanta Automobile Association. It has been determined to give a $5,000 trophy to the winning driver in the big race. On that trophy will most likely rest the seal of the city of Atlanta. It will be the gift of the city and all the people will have an interest in the giving. More than a dozen artists are now at work on designs for the trophy and the one considered to be the best will be selected. Mayor R. F. Maddox has named a committee of citizens to look after the trophy funds and to take charge of the matter for the city. The general council is expected to vote its approval of the idea and the gift. So the man who wins the prize will not alone be handed out a trophy worth $5,000. He will be the possessor of a gift given by the entire city. The Atlanta Automobile Association does not expect the city to give all of the amount that is to be invested in this trophy and stands ready to make up any deficit that may exist. It is, however, the desire of the association that the gift be made by the city.



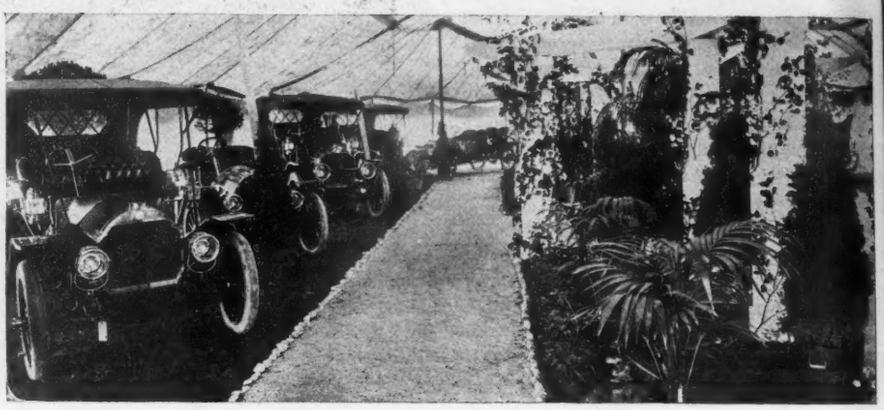
Basement Diagram of Auditorium-Armory



STODDARD-DAYTON HEADQUARTERS AT THE SPEEDWAY WHERE NEW MODELS WERE SHOWN

Stoddard Agents Meet at Speedway

INDIANAPOLIS, Ind., Aug. 23—The annual convention of Stoddard-Dayton agents, hertofore held at the factory at Dayton, O., was transplanted this year to Indianapolis, and held in connection with the speedway races. Headquarters were at the Denison hotel, and a special tent was erected at the speedway for convention purposes. Sessions were held on the mornings of race days and the agents, who arrived Wednesday and Thursday, had their entire expenses to and from and during their stay in Indianapolis, paid by the Stoddard-Dayton makers. Lunches and refreshments for all were served during the races in a special buffet tent by a corps of waiters and a chef from Dayton. The agents were banqueted at the Denison Thursday and Friday evenings, and on the day of the meet an excursion train of seventeen cars brought over the employes of the Dayton factory. The exhibition tent covered an area of 100 by 60 feet, and an Italian pergola, 66 feet long, covered with growing vines, flowers, stately trees and jumpers, together with the blue stone walk lined with flowering geraniums, carried out the general garden effect.



INSIDE VIEW OF STODDARD-DAYTON DISPLAY AT INDIANAPOLIS

Fifteen cars of the Stoddard-Dayton 1910 line were arranged around the outer oval; and although the exhibit was intended only for the agents, thousands were attracted by the unusual sight, and the company was forced to let in the public. The exhibit comprised everything put out by the Dayton Motor Car Co., including runabouts, baby tonneaux, five and seven-passenger touring cars, a characteristic speed car of 60 horsepower, and limousines, landaulets and coupes in most elaborate upholsterings of whipcords, leathers and broadcloths, with horn and every style of trimming. All Stoddard-Dayton closed cars for 1910 have an effective low appearance. The gasoline tank in the rear is a notable change, and on one car the body was left unpainted to show the reinforced aluminum construction, which is a feature of these cars.

At the banquet of the first night the table was formed in the shape of a V, decorated with a large motor car in flowers; the favors were boutonnieres of red and white, the company colors; and there was music of various kinds from 8 till 12. At the second night banquet the table was in the form of an S and decorated with ten immense vases of American beauties, ferns, smilax and rhododendrons. There were plates for over 800.

The agents in attendance were: Ferris, Boston; Cramer, Buffalo; Babcock, Tillotson, Chicago; Church, Los Angeles; Hershede, Cincinnati; Moore, Cleveland; Jenkins, Columbia; Roberts, Columbus; Dodds, Dayton; Barnett, Denver; Sears, Des Moines; Newmann, Detroit; Burlington, Holyoke; McGee, Kansas City; Ward, Lexington; Longest, Louisville; Burmeister and Kelly, Minneapolis; Hartwell, Mobile; McShane, Newark; Wheeler and Westerfelt, New Haven; Newton, Whiting, Percy and Warren, New York; Berrien and Hamilton, Philadelphia; Estill, Omaha; Moore and Jackson, Pittsburg; Zimbrich, Rochester; Thompson, Salisbury; Holligan, Savannah; Thompson, Thomasville; Atwood, Toledo; Smith and Bonvier, Toronto; Lucey, Troy; Tooke and Decker, Utica; Ide, Syracuse; Halff, San Antonio; Shallenberger, Wichita; Shoemaker, Elmira; Cox, Harrisburg; Schaab, Baltimore; Dorsett, Washington; Wallace and Dewitt, Chattanooga; Garrett, Wilmington; Leavitt and Plughoff, San Francisco; Sharman, Salt Lake City.

NORTHWESTERN TRADE NEWS

Minneapolis, Minn., Aug. 23—There are rumors rampant of big doings in northwestern motor circles. These rumors connect the name of the Wilcox Motor Car Co., of Minneapolis, which makes the Wilcox trucks and pleasure cars, with the names of prominent North Dakota capitalists who have reams of money to invest in the motor industry. The Wilcox company holds title to three solid blocks of property adjoining its present factory, which, by the way, has been enlarged five times in the past 2 years. Announcement also was made the past week of the formation of a new company in Minneapolis and northwestern motor circles, to be known as the Hathaway-Stimson Co. This is composed of W. S. Hathaway, the Kansas City manager of the Maxwell interests, and B. E. Stimson, the Minneapolis Maxwell manager. The new concern has contracted for the entire north and middle western territory for the Hupmobile and will handle the product of this company between Minneapolis, Omaha and Kansas City. The Detroit electric also has been taken on and Minneapolis soon will see the building of a new garage for the handling of the electric business of the new company.

STODDARD-DAYTON AGENTS AT BANQUET FIRST NIGHT OF THEIR ANNUAL CONVENTION

Willys Reviews European Situation

INTERIOR OF TENT AT SPEEDWAY, SHOWING FLORAL DECORATIONS

NEW YORK, Aug. 23—John N. Willys, president of the Overland Automobile Co., and the Marion Motor Car Co., Indianapolis, Ind., who has been abroad for the past 2 months, returned to New York yesterday after visiting England, France, Italy, Belgium and Switzerland. While on the continent he visited many of the motor factories and comes back with the belief that 1910 will unquestionably be the biggest year in the history of the European motor car industry. This belief is not only based upon his visits to the factories, but upon the wonderful growth in both the pleasure car, commercial vehicle and taxicab business.

"Paris, London and other large centers on the continent, are fairly alive with taxicabs," says Mr. Willys. "While New York, Boston, Chicago and other American cities are using a great quantity of taxicabs, the quantities being used in this country cannot be compared with those used in European centers. I was greatly impressed by the large amount of limousines and landaulets and other high-priced European cars in use. There seems to be a very small number of low and medium-priced cars being used in Europe, but this is due to the fact that European makers are centering their efforts on very powerful and high-priced machines and not because the public does not care for the small cars. In my opinion, there is an excellent field in Europe for good low and medium-priced American machines. There are now in Europe a few American cars, but they are not by any means the best medium-priced American goods. As soon as American dealers are cared for with Overland and Marion motor cars, it is my intention to open up agencies for these cars on the continent.

"One of the most interesting things to my mind was the great progress that has been made in commercial vehicles. In London and Paris the motor cab is crowding the horse drawn rig. There are hundreds of motor buses, most of them double-deckers, although future ones will have one deck only so as to handle easier. Roughly, I should say that there are at least 5,000 motor taxicabs in Paris and 2,000 in London.

"The European makers practically concede that the American manufacturers have led them in small car construction since the inception of the industry, the foreigners basing their superiority on the large and powerful machines. I believe that the foreign makers will have to work for a time at least under many disadvantages in small car building. While they have had wide experience in making the big cars they have paid little attention to the smaller type. They are not backed by the up-to-date American methods. They have not the modern machinery which we possess; in fact, the little modern machinery they have is of American construction.

"While the foreign maker has in many respects led the American manufacturer, it has been a case of the latter following those of foreign kingdoms. It was a case of America closely watching the output of foreign factories in hopes of securing new ideas. In other words, it was the American who copied foreign styles. Today I believe it is different. The time has passed when it is necessary for the manufacturers in this country to follow in the wake of those abroad. True it is that for a few years the pace was set across the seas and we followed. Now the foreigner has sat up and taken notice."

WHITE COMPANY CHANGES

Cleveland, O., Aug. 23—A rumor on Saturday regarding big changes in the Ohio department of the White company materialized today by the formal announcement of a change in management. The resignation was accepted of Hobart M. Adams, who was formerly manager of the Ohio retail department and in direct charge of the Cleveland local department. Mr. Adams has been with the White company for about 6 years. Frank E. Stiverson, sales manager of the Ohio retail department and Cleveland branch under Mr. Adams, now succeeds to Mr. Adams' berth in addition to the position he formerly held. He has been with the White company for 5 years. These changes were made coincident with the consolidation of the two repair and stock parts departments formerly maintained in Cleveland, one for the Ohio retail and one for the wholesale ends of the business. H. N. Searles, who drove the White car in the last Glidden tour, is to be at the head of the new division of repairs and stock parts. The branches of the White company at Cincinnati, Toledo and Columbus which are under the Cleveland division remain as they were under the new manager.

Motor Utility Shown By Ea

PACKARD TRUCK CARRYING SUPPLIES IN THE MANEUVERS
WHITE STEAMERS CARRYING OFFICERS DURING MIMIC WAR

BOSTON, MASS., Aug. 21—The war maneuvers just ended in this state, whereby an invading army composed of New York, Pennsylvania and Washington troops, with regular army men, sought to capture, and were opposed by the Massachusetts militia, which maneuvers were the most important ever held in this country, proved conclusively that motor cars must be given a place in all future operations involving the clash of troops on land.

For 1 week something like 100 machines played an important part in the game of war, and when the maneuvers were over all the officers and men who watched the work of the cars were loud in their praises of their effectiveness. This is all the more prominent when it is considered that a few years ago when arrangements were made to use motor cars in connection with military movements in the Bay State the order came to cancel the arrangements on the ground that it was unmilitary.

Mounted Battery's Work

The most important of all the motor cars was perhaps the mounted battery. Battery A, of the Massachusetts troops, had secured two motor trucks, one a Packard and the other a Frayer-Miller. In the center of each one of their rapid-firing guns was mounted, and the trucks were covered with foliage to screen them so they resembled the woods in which they were worked. Then they were sent into action. Day after day these two trucks did some wonderful stunts. Over the highways they flew from place to place at a much greater speed than any horses could have hauled them and they were invaluable in reinforcing troops which were hard pressed.

What proved their value more than anything else, however, was the fact that their operations were not confined to roads. When the orders were given to get to some point maps were consulted and the shortest way was picked out. This frequently led across lots and through fields that were planted. It did not matter. The power was applied and away the trucks went, cutting their way over the land whether it was hard or soft and getting to the place designated. Then into action the guns went. Another valuable point that was not lost sight of by the officers was the fact that the vehicles could be handled quickly and so got out of range when ordered more handily than if horses were attached. They were also of value because they were ready when wanted. The fact that the machines never balked at any time during the maneuvers was commented upon time and again. So when the war ended and the battery made its march through Boston today hundreds of people had a chance to get a good view of what they looked like. Neither of the trucks was built especially for this service. The Packard was taken out of the Boston branch garage, borrowed from a firm that uses it every day. The Frayer-Miller also is in use every day as an express wagon.

Work of the Autocars

Next in importance perhaps were the twenty Autocar trucks that were sent on with the invading troops from Philadelphia. They were at New Bedford when the invading army arrived, and in short order each car was loaded with equipments from the quartermaster's department and sent to the front. In fact so fast did some of them go that twelve of the drivers were held up for overspeeding in Providence. All during the week these trucks were used constantly. When the Red army changed its base of supplies the trucks were loaded to their limit and they helped materially in giving General Bliss the advantage, for he was enabled to get his supplies around General Pew's army more quickly than if horses were used, for animals would have had to travel slower and at times they would get stuck, as many of the wagons drawn by horses and mules did, causing delays.

For ambulance service with the Blue army there was a White steamer that had been sent to brigade headquarters by Manager Hathaway, of the Boston branch. Its value was shown the very first day after going into camp, on Sunday, when a trooper was suddenly stricken with appendicitis. The physician said he would have to be taken to a Boston hospital, which was at that time about 25 miles away. The patient was whisked off and the run made in a little more than an hour. At the hospital the surgeon who operated upon the man stated that a delay of just 1 hour more would have cost the man his life, so were it not for the motor ambulance the soldier would now be a martyr to the war game. All during the week this ambulance was in service day and night following the troops into action and taking the men who suffered from bruises, sprains and other accidents to the brigade hospital, sometimes six or more at a time. It covered hundreds of miles during the week and proved its efficiency time and again. So that shows that motor ambulances are a necessity in warfare.

The officers on both sides also made use of cars. General Pew and his staff had three White steamers and they were going

Eastern War Maneuvers

PACKARD TRUCK TRANSPORTING THE SOLDIERS
WHITE AMBULANCE IN ACTIVE SERVICE AT THE FRONT

all the time back and forth to keep him in communication with all sections of his large army, and as it was strung out over many miles no horse could have done the service, nor two or three horses, for that matter. Lieutenant-Colonel Sullivan, of the Ninth Massachusetts Infantry, had a Rambler car, and it was surprising how much ground he covered. The other officers who could not get cars often borrowed machines from the newspaper men.

It was the war correspondents, however, who found how valuable were the cars. They had to skip back and forth along the lines and then cut across country to get to telegraph offices so that it was a day and night job to keep posted and then get stories away. There was a Studebaker-E-M-F used by the two Boston Globe writers, J. Harry Hartley and J. N. Taylor, with the Blue army, and it also carried two Globe photographers. No car was worked harder or traveled more, for when Hartley did not use it Taylor had it. An instance of its work was shown when one day while bowling along with the four Globe men it came up with a trooper who had a badly-sprained ankle. He was accompanied by an army surgeon and they begged a ride because the case was urgent. Into the car they piled, making seven in all, and the driver cut out the speed so that they traveled the 4 miles to the army hospital in 6½ minutes. J. C. O'Leary, the other Globe man, had a Reo and he never had any trouble with it. Richard Harding Davis, who has seen wars in many countries, was at this one and he had his own motor car. In fact with the New York and New England newspaper men and the magazine and weekly paper writers there were at least fifty men. Between them there were perhaps thirty motor cars of various makes and without them the newspapers would have had few good stories.

The roads down where the maneuvers were held are mostly sandy, for it is the sea coast and cape section of Massachusetts. To make it all the more arduous the rain poured down day after day when the war was was heaviest and this made the roads very wretched. Wagon trains were stuck repeatedly while the motor cars would cut across fields off the roads and rumble along out of the rut when they got cornered. This happened often. So all things considered everyone that had the use of a motor car in the maneuvers found that they were the right things in the right place, and the manufacturers can get all sorts of testimonials from grateful users, particularly from army officials.

Practicability of the Truck

According to a member of General Wood's staff, should another war break out between the United States and a foreign power, the bulk of the big army appropriation for transportation of troops on land would be used to purchase commercial gasoline trucks instead of horses, as has been the case in the past. The army officer who made this declaration had been watching the work of the Packard truck for several days in the maneuvers.

When the Maxims, the Krupps and others invented death-dealing rapid-firing guns and other forms of mechanical annihilating weapons some years ago, they revolutionized the warfare of the olden days to a remarkable extent. However, these inventions did not begin to revolutionize and completely upset the science of warfare as has the invention of the motor car—the commercial car particularly. Until recently the two vital factors considered in mobilizing an army were so many thousand men in good physical condition and a sufficient number of horses to carry food for them. It is all changed now. General So-and-So with his army composed of so many regiments ready to muster does not worry about how many horses are available, for horses are a nuisance. The question of vital importance to him is how many touring cars and commercial gasoline vehicles are obtainable?

Daily is seen in city streets, demonstrations of the prowess and advantage of commercial vehicles. However, a person who was not out on the firing line during the maneuvers of last week and who did not have the opportunity to watch the work of two trucks, one of which was used by each of the opposing armies, has no conception of the immense value of these cars in time of war.

Roads In Horrible Shape

The writer happened to be at the front on each of these trucks—with the Red army part of the campaign and with the Blues the balance of it, and he saw these perform almost impossible feats over roads flooded with a 3-days' downpour—through veritable rivers of mud that submerged axles and springs—"roads" over which knee-deep teams of horses found it impossible to pull wagons. People who were outdoors in some of that rain can imagine how these roads looked, and yet those trucks like gigantic mud-turtles pulled through the slush every time and literally "delivered the goods" at the required destination in good shape and in very fair time.

The war department in Washington, D. C., possessing the experience and knowledge gained in wars of the past, has the problem of handling an army under the old school system, down to an exact science. The figures are cut and dried and are 99 per cent accurate. For instance, an army on foot can cover when in good physical condition 15 miles a day, averaging 2½ miles per hour on the march. A division train is 15 miles long and consists of 192 commissary wagons and seventy-two hospital wagons. Each wagon to move properly and without stalling requires 60 feet of road space and when hitched to four-mule teams can carry 2,500 pounds each, of which 48 pounds of oats and hay per day for each team must be allowed for. These are merely a few figures with which the majority of army commanders are familiar —figures which held good until a few months ago, but which have been thrown all out of kelter by the gasoline car.

A Few Statistics

Now behold the difference and realize why every army officer is more than enthusiastic over the motor-driven truck. Take for example a 24-horsepower, 3-ton truck, such as was used last week. It covers at a governed speed 12 miles an hour and carries 6,000 pounds as a normal load. It takes up 20 feet of road space—one-third of that required for teams. In other words, such a truck carries more than two four-horse or four-mule teams, and travels five times as fast for an unlimited distance; fatigue and sore hoofs not entering in the case. There also is an economy of 100 feet in road space per car, which means much in dispatching an army strung out in a long line over narrow roads.

When an army is on a forced march through the enemy's country, scouts, pickets and outpost men try harder to kill off the horses of the invaders than the men themselves, and history records that this has been done many times, and armies demoralized with great success. Fancy, though, the riddling with bullets that a 3-ton truck would stand. Gasoline tanks might be punctured and repaired in a short time; the driver might be picked off and another soldier would be found to take his place instantly, but a horse or mule hit with a bullet not only has his usefulness ended, but also causes a halt in the line of march.

But while all this demonstrates the multiple superiority of the motor truck, perhaps its chief advantage to an army in the field is the area of operation made possible. According to the old method of military reckoning, an army cannot be permanently located more than 30 miles from its base or central point; for in using horses, this is the maximum distance over which supplies can be carried successfully. If a division is sent as much as 45 miles from the army base, that division will run out of food in 11 days.

On the other hand, with a motor truck, an army could be maintained and kept in close touch daily with its base, at a distance of 150 miles—five times as far off as under old conditions, and troops even could be successfully handled at a distance of 250 miles, if occasion demanded that it should be done.

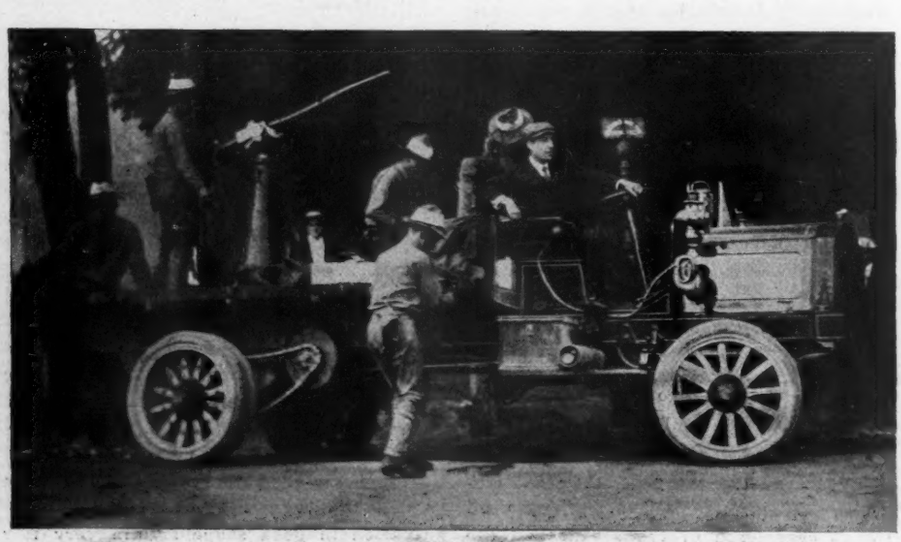
Whence our more modern military men have decided that the ideal equipment for an army is to have established a central field base, with the troops of the main attack or defense located 25 miles in the direction of the enemy. One or more 3-ton trucks should be employed to establish a trunk line service between the field base and the advance lines. From the latter point, 1-ton to 2-ton trucks should be used for distributing supplies for the more or less scattered division camps and outposts. This is substantially what the truck in the quartermaster's department of the Red army did in Massachusetts in the march to attack Boston, and did it so successfully that after the first 2 days the department dispensed with horses entirely. This truck, driven by Fred Robinson on Wednesday, August 26—the rainiest day of the campaign—carried 6,000 pounds of beef, in the dead of night, a distance of more than 71 miles from the headquarters at Fairhaven to a point far to the north of Middleboro. On this trip the car continually kept encountering such deep ruts that pebbles and rocks would catch between the chain and rear axle sprocket, and yet both of these stood the strain and pulled through undamaged. While the deep mud caused the car to stall at times, no external assistance was required to extricate it—there was no such assistance to be had in that part of the country. Horses drawing army wagons frequently got stranded in this way, and companies of troops had to pull them out, but the Packard had no companies marching with it.

The car also pulled heavy loads of baled hay, ostensibly for the horses of the cavalry and artillery, but some of the Blue prisoners declared that they were forced to eat it. It also was of great value as a hospital wagon. Hundreds of troops on the march toward Boston were disabled by swollen feet and knees, having contracted rheumatism and kindred ailments during the first wet days. The truck carried large numbers of these sick men, relieving their companies of the hardship of carrying the men on stretchers. The car worked day and night, almost without ceasing, for the first 4 days of the campaign, its driver on several occasions almost dropping from sheer exhaustion. Within 6 days it covered over 422 miles under heavy load, and in view of the torrents that came down those first days, anyone would have gambled that the truck would not have gotten 5 miles out without retiring.

With the Blue Army

As for the truck in the Blue army, upon which was mounted a 1-pound Hotchkiss rapid-fire gun, and which could skip about the skirmish lines with the agility of a fox, it showed that it could wipe out battalions of a regiment from in front, then bear around and trim down a right flank, and also circle around and get at the rear guard before the enemy knew where they were at. Only military men and gunners can appreciate what having a gun on a motor truck means, for horses under the same circumstances are extremely difficult to handle, fall and meet with accidents, in addition to being dropped by the enemy's bullets.

The umpires of General Wood's staff declared that on Tuesday, when New York and Connecticut regiments were vigorously attacking the Massachusetts Blues, that had it not been for the truck, the Eighth regiment would have been completely annihilated. In this particular instance, had the truck with its gun not reached the ground at the crucial moment —a feat impossible for horses—the Red army would have won a signal victory and



GETTING RANGE OF ENEMY PREPARATORY TO FIRING

(Continued on page 32)

VANDERBILT RACE MAY BE RUN THIS FALL

NEW YORK, Aug. 25—Special telegram—H. E. Coffin, chairman of the general rules committee of the M. C. A., has notified the prominent members of the committee that a race for the Vanderbilt cup will be held if a sufficient number of entries to insure the success of the event are pledged on or before September 1. The mails and telegraph are being used in a thorough canvass of the situation. If the makers guarantee the required number of entries, the race will be conducted by a new association formed pursuant to the A. A. A.—A. C. A. peace agreement, which will assume the custody of both the Vanderbilt and the grand prize cups. The actual incorporation of this holding body will take place when the Vanderbilt race of this year is assured. In its membership are motorists of national reputation. By a change in the deed of gift the Vanderbilt trophy will become one for stock car competition, under rules recommended by the manufacturers' contest association, as follows:

1—The Vanderbilt cup race shall be open to cars of classes 1 and 2 of division B, under the classifications of the A. A. A. racing rules for 1909.

2—A cup will be offered for class 3 and another for class 4 under the same division, to be raced for at the same time and on the same course, but at shorter distances. These classes call for competition under piston displacement, and were recommended as providing a possible race for existing stock cars, as the time was realized to be too short for the building of any new cars for this special event.

The race will be held over the portion of the parkway used in 1908, with probably the same Nassau county roads. A request has been made, however, that the course be shortened, and engineers, looking into the matter have found this to be possible. If the short course is finally decided upon, it will probably be about 4 miles less than that of 1908.

TEN IN TRIBUNE RUN

Duluth, Minn., Aug. 24—Special telegram—The first half of the Tribune reliability run was completed today when the ten entrants checked in at the Hotel Spaulding after a day's run under varying conditions. All of the cars were ahead of schedule at Sandstone, the noon control, and also were all checked in on time at Duluth, except the Hupmobile, which had a series of engine troubles after entering Duluth.

The penalties for the day's run were not announced by the committee tonight, as they had not been figured. The principal troubles incurred, however, were through tires and stalling of motors. Ford No. 2, before it had reached the outskirts of Minneapolis, stalled its motor because of the flooding of the carbureter; this was remedied soon, however, and the car caught the others in its class. There were many ditch experiences during the day, in which the Pullman, Gaeth, Pierce and Peerless press car figured.

At Sandstone rain set in and the remaining 78 miles of the journey to Duluth was covered in rain and over slippery roads. A Maxwell non-contesting car went into the ditch just before reaching Carlton and was pulled out with no damage by the Peerless. Sand going was found as far as Sandstone, after which the roads improved somewhat with the exception of several stretches of corduroy.

Ready for the Start

Minneapolis, Minn., Aug. 23—Everything is in readiness tonight for the start of the annual Tribune trophy run which this year will go to Duluth and return. Final changes in the entry list leave ten cars to start tomorrow morning with possibly four or five as non-contestants.

F. H. Trego and Berne Nadall, the technical committee, were busy this morning and afternoon making their preliminary examination of the entrants. The third floor of the Pence Auto Co.'s new motor building is being used as the club garage and it makes an ideal spot for an examination room. Three drivers of note are to pilot three of the contestants when they get away tomorrow morning. Walter F. Winchester has his Glidden No. 9 car in which he won a perfect score in this year's Glidden, and Jean Bemb, of the Chalmers-Detroit outfit, will drive one of the Glidden Bluebirds. C. S. Carris, of the Franklin company, arrived this morning.

The Duluth Automobile Club which has been recently reorganized, is taking a keen interest in the run and has prepared a reception and entertainment for the tourists. A dinner will be served at the Hotel Spaulding, Duluth, and in the evening there will be a drive over the famous boulevard drive for which Duluth is noted. The mileage is 186 miles to Duluth and the route includes the following towns: Anoka, St. Francis, Isanti, Cambridge, Rush Point, Rush City, Rock Creek, Pine City, Beroun, Mission Creek, Kinckley, Sandstone, Rutledge, Willow River, Sturgeon Lake, Moose Lake, Barnum, Mahtowa, Atkinson, Carlton, Duluth.

The noon control will be at Sandstone, 108 miles from Minneapolis, where an hour will be given for dinner, oil and gasoline. No oiling of motors will be permitted at Sandstone, merely the filling of the oil supply.

Class 1—No. 3, Lozier; No. 9, Pierce.

Class 2—No. 10, Gaeth.

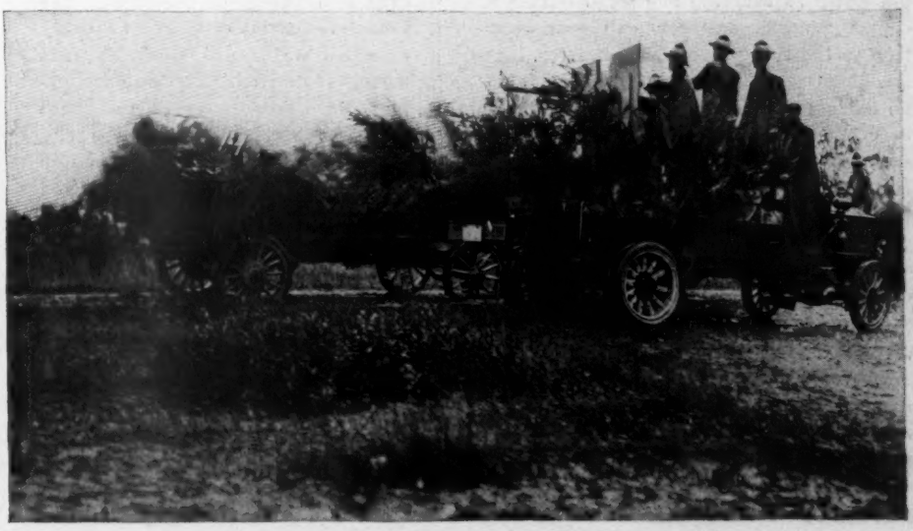
Class 3—No. 5, Chalmers-Detroit; No. 6, Chalmers-Detroit; No. 8, Franklin.

Class 4—No. 11, Pullman.

Class 5—No. 1, Ford; No. 2, Ford; No. 4, Hupmobile.

TIME TRIALS AT LONG BRANCH

Long Branch, N. J., Aug. 21—Lengthy delays, while horses were cantering up and down Ocean avenue this afternoon, interfered with what might have been a very successful series of 1-mile straightaway speed trials. It was 5:45 p. m. when the cars were called to the tape, and they did not finish the heats until well into the dark, with their gas lights doing valuable service. The stock cars had matters their own way, in spite of the fact that there were a number of special types on the course. The Simplex took the honors of the evening for the fastest time, twice covering the mile in 52 seconds, a rate of 69.2 miles per hour, winning the $4,001 and over class and the free-for-all. The big 120-horsepower Roebling was second in point of time, its record being :53, in the open class. Walter C. Allen's A-K captured the $3,001 to $4,000 division, in 55 seconds, with the P. & S. one second behind. Other class winners were: $2,001 to $3,000, S. P. O., 59 seconds; $1,251 to $2,001, Buick, 1:09; $851 to $1,250, Cadillac, 68 seconds.



MOTOR BATTERY IN ACTION, ONE GUN HAVING BEEN FIRED

The Readers' Clearing House

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems, and invites the discussion of pertinent subjects. Correspondence is solicited from subscribers and others. All communications must be properly signed, and should the writer not wish his name to appear, he may use any nom de plume desired.

NO STOCK CAR FARCE

CHICAGO—Editor Motor Age—I was particularly surprised on reading the communication in last week's issue by John Smyth entitled "Stock Car Farce." Mr. Smyth apparently assumes that there is no honor among the car manufacturers of today and that such a thing as a stock car does not exist. He mentions that the Locomobile compression was increased by arching the cylinder heads. This is true, and this is done in the 1910 Locomobiles and the Locomobile entered was a 1910 model so that there was no deception whatever in this case. The Knox car entered was a 1909 model M and was a stock car in every respect and has always been a chain-driven car and sold as such. Its cylinders were the standard size, and if Mr. Smyth were to familiarize himself with stock cars he would know this. The shaft-driven Knox was a 1910 model and was entered as such and was a stock car in every respect. The Chalmers-Detroit cars used auxiliary exhausts which is stock with those models as I understand the company made affidavit that it has built twenty-five of this type, which should be sufficient proof that it has done so. The Buicks were special machines and entered as such and they complied with stock definition by having built the required number or had the necessary parts to do so on hand. There is no use in Mr. Smyth decrying stock car events without knowing the real facts of the case and when makers have complied with stock car definitions they are freed from any criticism that should come up.—Reader.

DID NOT CARRY SPARE PARTS

East Moline, Ill.—Editor Motor Age—I note that in the official statements that have appeared in all of the technical papers Moline cars 100, 101 and 102 are put down as carrying one small bundle of copper wire. I desire to call your attention to the fact that this is an error, inasmuch as these three cars carried absolutely no extra parts or supplies. We still have in our possession the three empty sealed sacks that were given us at the start in Detroit. While the text of everything that has appeared in publications has given us credit for carrying absolutely no spare parts, I feel that the official report ought to be corrected in this respect.—W. H. Van Der Voort.

WHAT CAUSES PREIGNITION

Newton, Ill.—Editor Motor Age—I have a four-cylinder air-cooled car which knocks after running a short distance, caused by preignition. The cylinders have been scraped and thoroughly cleaned, but it still knocks as soon as it gets hot. What plug is best for an air-cooled car and would a difference in oils cause it to heat up faster? After running a short time the switch plug can be taken out and two cylinders will keep on firing, and it is impossible to stop the engine when hot on account of back firing. What is the remedy for this engine?—H. Hot.

It is natural to expect that ordinarily an air-cooled motor works at a higher temperature than a water-cooled one, and the knocking of which you speak as due to preignition must be caused by the motor not cooling sufficiently. You may be using too heavy an oil, which leaves too great carbon deposits on the cylinders, which, quickly becoming incandescent, cause preignition. The majority of air-cooled motors use medium-weight oils which burn without leaving carbon deposits. Changing the spark plugs or coil will not have any effect on the cooling. It may be your spark is too far advanced, due to a loosening of the spark control connections or bending some of the control parts.

COBE CARS WERE STOCK

Chicago—Editor Motor Age—We, the technical committee of the Cobe trophy races, feel that a great injustice has been done the manufacturers who entered in these races by John Smyth's communication in the Readers' Clearing House of last week under the heading "The Stock Car Farce." Mr. Smyth does not state the facts which are briefly as follows: The Locomobile entered was a 1910 car and had its pistons slightly arched to increase the compression, which is being done on these models for next year. Mr. Riker, of the Locomobile company, furnished blueprints which were made before the rules governing the rules of the Cobe trophy races were in print showing the arched piston head so that there was no attempt at invasion of rules in any sense of the word or of building to suit the rules. Two Knox cars were entered, one a 1909 chain-driven model known as model M and which was stock in every respect and whose cylinders, 5½ inches square, were not larger than the stock car. The shaft-driven Knox was a 1910 model with cylinders having 5-inch bore, which is the stock size for next year. This car complied in every sense of the word with the stock car definition without any attempt whatever at invasion of the rules. The Chalmers-Detroit cars used auxiliary exhausts which are stock on 1910 models if desired. The Buicks complied in every sense of the word with the stock car definition and entered as special models and had on hand when the factory was visited the necessary finished parts to build ten of these cars, as required by the rules. With the other makes of cars entered in these races the stock definition was adhered to in every respect.—D. Beecroft, F. E. Edwards, B. Nadall, Technical Committee.

GEARING NOT CHANGED

Lafayette, Ind.—Editor Motor Age—I have a 1909 model 17 Buick geared 2½ and 1 and equipped with 32 by 4 tire. I want to put on demountable rims with 32 by 4½ tires. At what ratio would my car then be geared and what effect would it have as to my power?—A Subscriber.

There is no necessity to change your gear ratio when demountable rims are used, in spite of your using 4½-inch tires. It is true that demountable rims are heavier than the ordinary kind, but this will not affect the car's running. Demountable rims are now used on many of these models.

HAS ONE-CYCLE MOTOR

Atlanta, Ga.—Editor Motor Age—Having read with interest brief descriptions of new types of motors, I though perhaps a one-cycle motor story might be of interest. The object of this motor is to have two power explosions in each cylinder each revolution. This motor is illustrated in Figs. 1 and 2 in which C is the water-jacketed cylinder, mounted on a crankcase part K. Reciprocating within this cylinder is a hollow piston P with its lower end L in the form of a plate fixed to the bottoms of the side walls and in turn connecting with the crankshaft A through the connecting rod R. V and V1 are valves through which the mixture enters, the crankcase being made gas tight to prevent leakage of the gases. A bypassage B is furnished by which the gases are passed to the two combustion chambers H and K. The hollow piston P carries throughout its length compression rings R. The plate L forming the bottom of the hollow piston P is provided with two openings through which loosely pass rods M, Fig. 2, these rods being for supporting the abutment C, which is within the hollow piston and would ordinarily be taken for

the reciprocating piston. These rods are hollow and communicate at their upper ends with the space O between the abutment Z and the piston end L, and at their lower ends communicate through ports V1 to the outside of the cylinder. A lower portion of the cylinder wall of the piston is cut away to form a passage Y to permit the charge of gas to pass from below the abutment G into the explosion chamber K above said abutment when the piston is nearly reaching the limit of its outward stroke. The wall of the piston adjacent to its lower end is provided with a port N adapted to register with the exhaust ports in the cylinder wall when the piston is at the end of the outward stroke, the abutment Z is cut away at the point T to enable the spark plug inserted in the opening T1 to reach the charge in the explosion chamber K. This abutment also carries a deflecting plate F and the port X, the latter port adapted to register with port Y when the piston is at the limit of its outward stroke. The piston is provided at its outer end with port D, Fig. 2, which on the instroke registers with the opening T1 for the spark plug, whereby the spark is permitted to ignite the mixture in the combustion chamber K.

The operation of the engine is as follows: With the parts in the position shown in Fig. 1 and with an explosive mixture compressed in the space H above the top of piston P and the piston just about reached the outer end of the compression stroke a charge of mixture will be admitted through the ports X and Y into the combustion chamber K. When the mixture in space H is ignited by a spark plug inserted in cylinder head the hollow piston P will be driven toward abutment Z, thereby compressing the charge in space K. As soon as the piston clears the exhaust port E the exhaust from space H will pass out, and as soon as the passage B is uncovered by the downstroke of the piston P the mixture will flow from the interior of crankcase G into the combustion chamber H, this charge serving to drive all of the exhaust out of this combustion chamber. When the piston P has reached the bottom of its stroke the opening D, Fig. 2, will register with the spark plug T1 and the spark made at the regular time will ignite the charge made in the combustion chamber K, which will drive the hollow piston P upwards and at the same time that it is going up a fresh mixture will be drawn into the crankcase G. It will be observed on each downstroke of the piston P mixture will flow through valve V1 and then through the tubes M, Fig. 2, into the space O beneath the abutment, where it will be compressed between the plate L and the abutment Z and that when the piston starts on its outward stroke this compressed mixture will flow into the space K as soon as the ports X and Y register.—R. W. Simon.

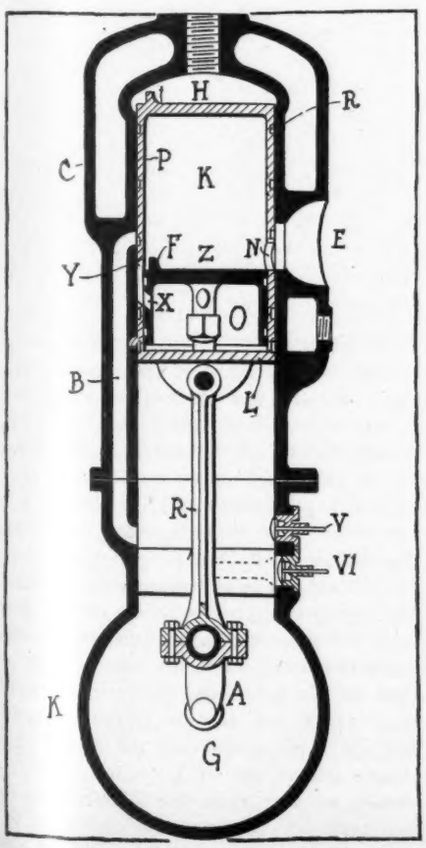


FIG. 1—ONE-CYCLE MOTOR

LA CROSSE-ST PAUL ROUTE

Lafayette, Ind.—Editor Motor Age—I want to take my machine through to St. Paul, Minn., the latter part of next month. Will Motor Age inform me whether the route of the Glidden tour this year from Chicago to St. Paul is the one usually traveled by tourists and considered the best? If not, what route is recommended? After crossing at La Crosse, is there not a good road nearer the river to Lake City? From there on I know there is a good road for the remainder of the way, for I have traveled it. Are there any good road maps of Wisconsin, especially the southern portion of the state?—W. J. Lutz.

From La Crosse there is a good road leading to Lake City, the places passed through being La Crescent, Dresbach, Richmond, Hemer, Winona, Minneiska, Weaver, Kellogg, Midland Junction and Wabasha to Lake City. A good route book covering the southern portion of this state is the Official Automobile Blue Book, section No. 4, which is devoted to the middle west and which can be obtained from the Automobile Blue Book Publishing Co., 1200 Michigan avenue, Chicago.

MACON-JACKSONVILLE ROUTE

Fairfax, Ga.—Editor Motor Age—Referring to Motor Age's reply to E. R. Wetherbee's question in the last issue of Motor Age, I beg to make the following suggestion in regard to the route from Macon, Ga., to Jacksonville, Fla. The best route is not by Savannah, as Motor Age suggests, but is as follows: Macon, Perry, Hawkinsville, Abbeville, Fitzgerald, Douglas, McDonald, Waycross, Folkston, Traders Hill, Callahan, Jacksonville. From Macon to Waycross the roads are already in excellent condition and in a few months will be turnpiked practically the entire distance, as this has been declared the official route from Macon into Florida. The writer recently made this trip, about 180 miles, in a little over 10 hours actual running time in a 20-horsepower car. From Waycross to Jacksonville—about 100 miles—the roads are not so good, but they are being improved and by winter will be in pretty good condition. The distance from Savannah to Jacksonville is more than 90 miles, being about 160. The route as outlined is being made almost daily by motorists and they usually follow the lines of least resistance.—H. D. Bunn.

COMPRESSION OF MOTORS

York, Neb.—Editor Motor Age—To settle dispute, will Motor Age kindly answer in the Readers' Clearing House the following: What is the compression in the average car of engine when starting same with crank? What when at normal speed? What is the explosion force when running, say 1,000 revolutions?—Jorgenson & Opper.

The cold compression in the motor car engines varies from 65 to 90 pounds to the square inch, the average being about 75 pounds. This compression remains practically the same irrespective of the motor speed, providing valves seat properly. At high speeds it might be slightly less, due to a smaller charge entering the cylinder. The explosion force varies from 200 to 300 pounds per square inch piston head surface. Compression increases slightly as engine warms up.

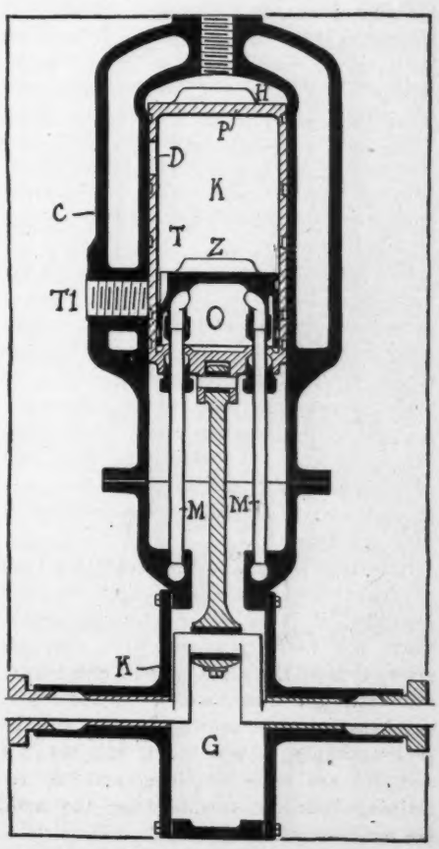


FIG. 2—ONE-CYCLE MOTOR

CRANKSHAFT CONSTRUCTION AND DESIGN

By Thomas J. Fay

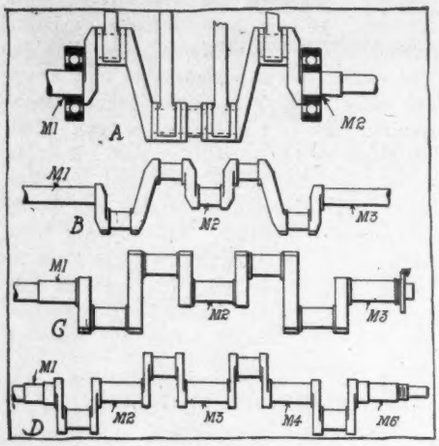


FIG. 1—FOUR-THROW CRANKSHAFTS

RECIPROCATING is converted into rotary motion by means of a crankshaft, involving the use of a connecting-rod and the remaining essentials. The broad idea is very simple, and were it not for the height and variable pressures, coupled with effects of inertia, crankshaft designing would be a very easy matter. As it is, in view of the conditions named, this problem is probably the most difficult one of all in connection with motor building, referring to the class used in motor cars, in which high speed is coupled with hfiigh duty.

There are divers ways of designating the types of crankshafts used, as single, double, triple, quadruple, etc., throw, by which it is intended to convey the impression that the respective crankshafts are contrived to serve for one, two, three, four, etc., cylinders. Side-cranks are not used in motor car motors, so that "center cranks" are always referred to. Side-cranks are of the class in which the crankpin is as a cantilever, supported at one end only; center cranks, on the other hand, are supported at both ends by means of crank arms.

Besides referring to crankshafts in the manner as above stated they are given a second subdivision according to the character of the bearings used, as ball-bearing types, etc. Still another designation is made, depending upon the number and location of the bearings used, in the manner as follows: A bearing on each side of each crankpin; a bearing on each side of each pair of crankpins; one bearing on each end only.

Referring to Fig. 1, A represents a type of four-throw crankshaft using but two bearings; B is of a three-bearing crankshaft for four cylinders, with diagonal arms; C is of the same type of crankshaft with straight arms, and D represents a crankshaft with a bearing on each side of each crankpin, in which M1, M2, M3, M4 and M5 are main bearings, and the remaining bearings, remote from the axis, are connecting-rod bearings.

In all of the crankshafts as depicted in Fig. 1 the section is solid, and a certain symmetry is aimed at on the count that any abrupt change of section will fix the place of concentration of strains and to a vast extent determine the point of failure of the shaft. It requires some discrimination on the part of the designer to be sure that harmful shapes will not be present, yet even so, there are allowable variations, as when a shaft is drilled out, in the neutral section, to allow for more perfect oiling. Fig. 2 shows just such a shaft, and since the oilways are all in the neutral plane it is highly improbable that any addition will have to be made to such a shaft to make up for weakening influence of the metal subtracted in the drilling process. It is even possible to consider the further subtraction of neutral metal with the idea of lightening up on the weight, which in some measure will reduce secondary moments, in extent, however, depending upon the design in general.

Relation of Solid to Hollow Sections

There is no more direct or better way of showing the relative ability of hollow to solid sections than to repeat the formula for torsional strength of the two sections as follows:

Let J = polar moment of inertia of the section.

c = distance of the remotest fiber from the axis.

d = outside diameter of a round section.

b = bore of hole in inches.

L = length of the shaft, from point of application of the twisting moment to the point of resistance of the same.

P = twisting moment in pounds, acting at the end of a lever-arm of a length, 1, as shown in Fig. 3.

S = shearing resistance in pounds per square inch.

1 = length of lever arm on which the twisting effort P is exerted.

$$\text{When } J = \frac{\pi d^4}{32} \text{ and } c = d|2$$

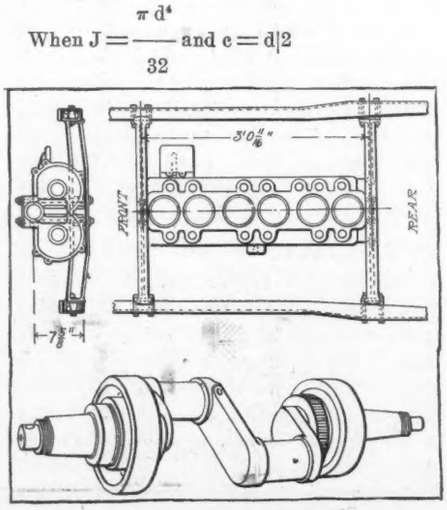


FIG. 4—CRANKCASE FOR SIX-CYLINDERS
FIG. 6—A TWO-BEARING CRANKSHAFT

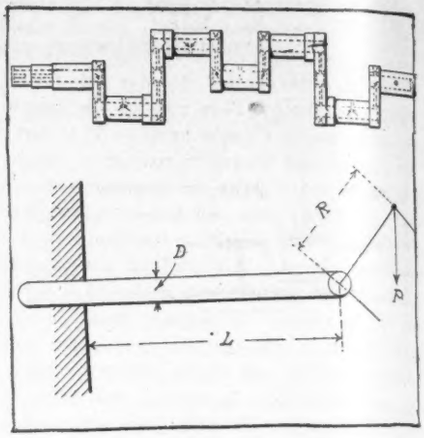


FIG. 2—DRILLED CRANKSHAFT
FIG. 3—TWISTING MOMENT IN POUNDS

$$P1 = \frac{SJ}{c} = \frac{\pi d S}{16} = 0.1963\, d^3 S$$

$$\text{And } d = \sqrt[3]{\frac{5.1\, P1}{S}}$$

When a hollow shaft is to be considered the formula must be modified as follows:

$$P1 = 0.1963 \frac{d^4 - b^4}{d} S, \text{ and}$$

$$d = \sqrt{\frac{5.1\, P1}{b^4}}$$
$$1 - \frac{}{d^4} S$$

An example involving the respective formulæ will show that but small value is to be attached to a larger portion of the metal around the axis of rotation, and that it is the extreme fiber remote from the axis that does nearly all of the work. Under the circumstances it is possible to lighten crankshafts, of the class as shown in Fig. 2, at almost no extra cost, because the difficulty of drilling will be but little more when the holes are somewhat larger, considering the drilling which is done for purposes of oiling.

Bearings No Better Than Supports

Alignment is the first requirement from the point of view of stable bearing performance and if the platform is unstable, that is to say, if the crankcase is limber it will be impossible to consider the bearings in a good state of alignment, and in the absence of this important condition the bearings will fail to give good satisfaction. Fig 4 is offered to show a crankcase for a six-cylinder motor, which type is of the greatest length used, but in this example the cylinders are cast in pairs so that the distance from center to center of supports of the case is relatively short, and the arms supporting the case to the chassis frame are of I section steel, attached as shown in the illustration, by two bolts located near the center of the case. The case has all the stability of

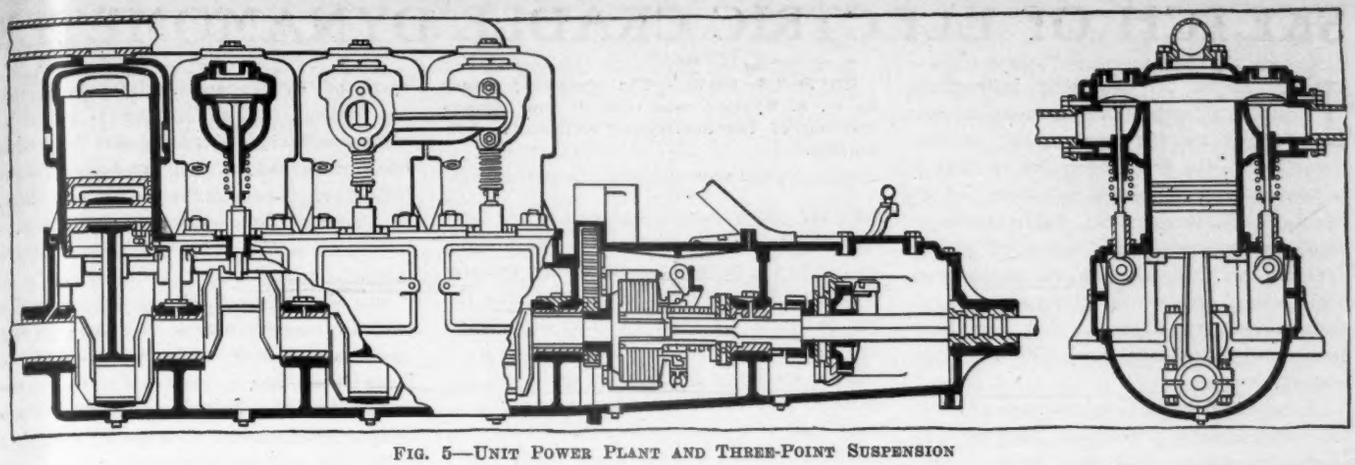


FIG. 5—UNIT POWER PLANT AND THREE-POINT SUSPENSION

cylindrical tube, and the distortions of the chassis frame are not likely to be transmitted, in force, to the crankcase for the reason that the arms are relatively limber; so that strength, on the whole, is assured, delivering flexibility to the point of vantage. In a design such as this there may be as many bearings as the occasion requires and the crankshaft may then be relatively light, since by the use of a proper number of bearings bending moments will be largely eliminated, and shearing, together with torsional moments will be all to be coped with to a material extent. There are divers ways of accomplishing the purpose, as when the three-point suspension is substituted for flexible arms, and when the whole power plant is in one unit, as shown in Fig. 5.

Absolute Rigidity Is Not Attainable

No matter how well a thing may be designed it will give a little when a load is applied, and it is better, by far, to allow for variations than to fight the inevitable. In the early days of designing it was the practice to make things so large and so tightly fitted that they "cramped," and failure was wrought in this way. Modern designing takes into account the utter impossibility of absolute rigidity, and even the materials of which important parts are made are selected for their kinetic properties rather than for any especial rigidity they may lay claim to.

Fig. 6, of a two-bearing crankshaft, is designed on a basis of flexibility; not on the assumption that there will be any noticeable deflection, but on the theory that molecular disturbances are set up, and that it is better to spread the disturbances over a large zone than to concentrate them. The bearings are at the ends, and since they are of the annular type it is certain that any deflection which may arise will do no damage at all, simply because the bearings are capable of caring for much more lateral movement than is at all likely to take place. In this class of crankshafts it is the aim to afford a due measure of rigidity by increasing the section adequately, which is not a difficult thing to do, since the strength to resist torsion is proportional to the cube of the diameter; shear is not increased and bending deflection is resisted to a better extent (inversely proportional to the cube of the length) because by the elimination of inboard bearings the shaft is made short and relatively massive.

Just as shearing moments will be absent in crankshafts of the class as depicted in Fig. 6, so it may be said these moments will be maximum in built-up crankshafts of the class shown in Fig. 7. Since the crankpin is pressed into disks, which also serve for flywheel effect, it is to be expected that bending will be eliminated and shearing will be the stronger of the tendencies. In fashioning crankshafts, then, it is an obvious requirement that these conditions can be taken into account, and any one of the types depicted can be made to serve their respective purposes, providing only, that the moments be properly determined and an adequate section of suitable material be used, avoiding defects in shapes such as are known to accentuate troublesome tendencies.

Breakages Likely to Show Similarity

Of a considerable number of crankshafts which failed in service but a very small percentage of them failed through fracture of the arm, as shown in Fig. 8, which class of failures must, as a rule, be attributed to flaws in the material rather than to inferior material or the limiting of the area of sections of the throws. In almost every case examined the sectional area of the arms was in excess of the requirements by a considerable margin, and even assuming the material to be very inferior the failures could not be traced to too small a section.

Fig. 9, like Fig. 8, is an outline of an actual crankshaft which failed in service, in which the material was a fine grade of chrome nickel steel; the crankshafts were from a well known make of foreign cars. In Fig. 9, however, the rupture is at the joining of the journal to the arm, nearest the flywheel end, and of a considerable number of these crankshafts nearly all of them ruptured at the junction of the crankpin nearest the flywheel. In every case, referring to this lot of failures, it was evidently a case of putting too much reliance in fine grades of alloy steel from the torsional point of view, and the sectional area at the crankpin as well as the main journals was below the requirement.

(To be continued.)

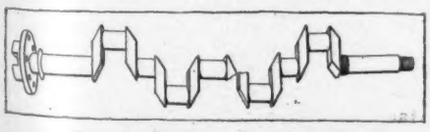


FIG. 8—BROKEN CRANKSHAFT

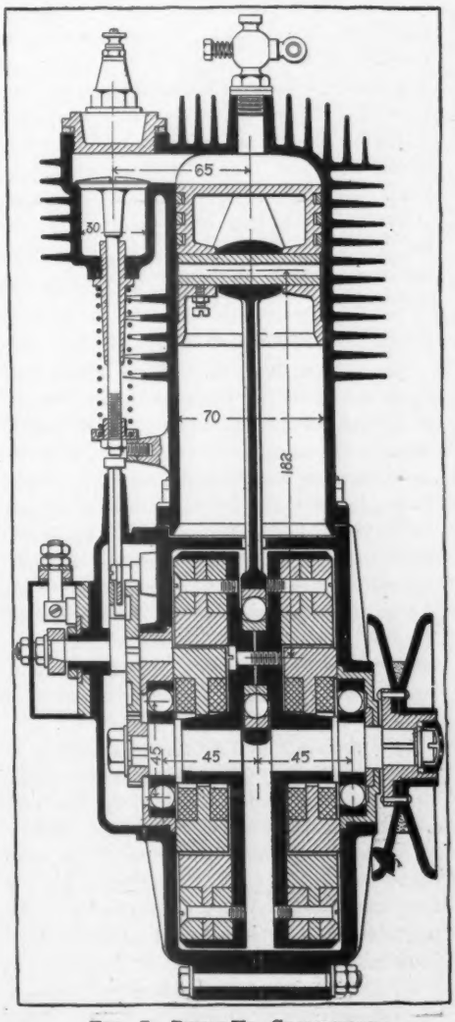


FIG. 7—BUILT-UP CRANKSHAFT

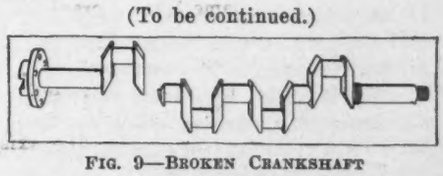


FIG. 9—BROKEN CRANKSHAFT

SKETCH OF ELECTRIC CRADLE DYNAMOMETER

EDITOR'S NOTE.—The following paper by H. S. Baldwin was read at the Chicago meeting of the Society of Automobile Engineers.

THE names of measuring instruments used by scientists and engineers are usually formed by the combination of two Greek words, the first descriptive of what is to be measured, the second indicating the act itself. Thus, thermometer, the measure of heat; tachometer, the measure of speed; dynamometer, the measure of power; and many others. All words of this class are of comparatively recent origin and most have been added to our vocabulary within the last century.

In the middle ages religious wars and dissensions did much to postpone the great discoveries in science which have made modern engineering possible. From time immemorial man had used the windmill, the water wheel and the horse to aid him in supplying his simple wants, and as sufficient power could be obtained with little effort on his part, he was not particularly interested as to questions of efficiency or economy in the operation of his prime movers. With advanced civilization, however, the problem of existence became more complex, and it was found necessary to have a more reliable source of power than wind or water, also one that could be controlled at will.

Of the three elements of the ancients, fire, air and water, fire remained, and it was quite correctly reasoned from various phenomena, especially when in contact with water, that heat could be somehow converted into power. If the way to utilize heat could be discovered it was certain that an unlimited supply could be had so long as there was combustible material, and that unlike wind and water it was subject to control. Machines were built for the purpose, but it was many years before the hopes of the early mechanician were realized.

Newcomen was the first to make a really useful steam engine, but its principle and design were crude. It was employed, nevertheless, to operate slow moving mine pumps. About 1765 James Watt perfected Newcomen's engine, and in 1769 was granted a patent for the steam engine substantially as we know it today.

Watt Originated Horsepower

The foregoing remarks have bearing on the subject of this paper, in that they fix about the time when it was found desirable to have means for measuring power. It was of little consequence to the early miller how much wind or water he used so long as he could grind the grain that was brought to his door. With the advent of the steam engine, however, questions of fuel, water supply and cost of operation had to be met and the relation of these to the output of the engine became a matter of great importance. Watt also realized immediately that he must have some standard of power, so that he could rate his engine and give the prospective buyer an idea of how much work it could do. Here he showed good commercial instinct by selecting the power of the horse for a unit. At that time the horse was used for power purposes as well as for traction, and the choice of the term was a happy one, since the customer could readily comprehend it. The question as to what was the real power of a horse then confronted Watt, and as no such unit of measure existed, it became necessary for him to settle this for himself. He therefore made a long series of tests, and as a result determined to his own satisfaction that a work horse could lift a weight of 150 pounds 2½ miles per hour for ten hours a day, or, in other words, perform an amount of work equivalent to lifting 33,000 pounds at a rate of 1 foot per minute. At the time, therefore, when Watt originated the term horsepower it undoubtedly conveyed some idea associated with what a horse was capable of doing; now it has lost this significance and has become the recognized unit of mechanical work.

Having adopted a unit of power, Watt found it necessary to prove to the skeptical manufacturer of that day the correctness of his rating. Offhand it would appear that there was little difficulty in this by following the terms of the definition of horsepower to lift a predetermined weight a certain height in a given time. On second thought, however, it is not altogether clear just how this could be done in a satisfactory manner. It would, of course, be necessary to have a clutch of some kind to allow the engine to attain its speed before lifting the weight. Load could only be applied for a short time, otherwise the lifting rope would be wound up on the drum. The difficulties in carrying out this method in practice entirely precluded it.

Steam Indicator in 1814

About 1814, Watt devised the steam indicator to record the pressure in the cylinder at all points throughout the stroke and it remains a commentary to his genius that this instrument is today unchanged in principle, although more refined in detail of design. There is no doubt throughout all his career Watt was a level-headed, practical engineer, and not a dreamer. He overcame every obstacle to the progress of his work. His indicator, however, only permitted the calculation of power developed in the cylinder, and did not give the effective horsepower of the engine.

It is probable that he knew something of the principle of the friction brake, which largely overcame the objection to the cord-and-drum method already discussed, but if so, no record is found of the fact. He lived between the years of 1736 and 1819, so it is very likely that he was also familiar with the differential transmission dynamometer invented by Samuel White, of England, in 1780, and known in this country by the name of Webber, who improved its design. This form of dynamometer, although, perhaps, the earliest, and eliminating as it did the serious difficulty of heating met with in the bank brake, has never found favor in engine testing, as its construction is too complicated and the fact that gearing is required makes it objectionable for high speed, accurate work.

The absorption or friction dynamometer is generally known in text books and by engineers as the Prony brake, but the fact that G. de Prony was a talented French engineer and writer, who lived from 1755 to 1839, is seldom mentioned. Napoleon Bonaparte, 1769-1821, was the patron of inventors and engineers, and employed de Prony on bridge and highway enterprises. The first reference to the Prony brake is in the annals of the Physical and Chemical Society of Paris, in 1821, although it may have been invented at an earlier date.

In the absence of any proof to the contrary, the evidence would indicate that G. de Prony was the inventor of the absorption dynamometer which bears his name, and as such deserves the gratitude of the engineering profession.

Various Forms of Dynamometer

For many years the Prony brake, or its equivalent the rope brake, afforded the only practical means for obtaining the effective of brake horsepower of steam and gasoline engines. In this form of dynamometer, however, all the power of the engine is absorbed by the friction of a band on a drum directly at the engine, and the excessive heat generated rendered it difficult to keep the parts cool. Drums, and sometimes bands, were made to contain circulating water, but even with these refinements, anyone who has attempted to hold a given load steadily on a gasoline motor car engine of over 10 horsepower for any length of time, by means of the Prony brake, will appreciate the fact that it cannot be successfully done. With the steam engine or electric motor the same difficulty is experienced, only to a less degree.

The Prony brake represented a step in progress toward a better method for measuring power, and as such, served its purpose well. Many comparatively recent absorption brakes embody the principle of Prony, as for example, the Alden water brake, in which a steel disk is caused to revolve between two copper plates surrounded by water under pressure; the water brake in which a steel desk rapidly revolves in a casing partly filled with water, the skin friction of the disk tending to cause the casing, which is mounted on ball bearings, to revolve; the gear pump in which the pump body is caused to measure torque or pull by throttling a passage between the suction and discharge. All these are designed to give a direct torque reading without the heating caused by rubbing friction in the Prony brake. They are all open to the objection of requiring circulating cooling water, with piping, necessitating a

special location and impairing the flexibility of the apparatus. Range of speed control is also limited.

The Paddle Wheel Brake

A form of absorption brake which certainly has simplicity and cheapness in its favor is the paddle wheel, working in air, oil or water. This method is only applicable to the commercial test of gasoline engines where it is desired to apply a given load at some fixed speed. In this case the wheel can readily be calibrated by the use of an electric cradle dynamometer hereinafter described.

There is another electrical method which is mentioned only as a matter of interest. It is based on the principle of the damper disk of the electric wattmeter. A large copper wheel is driven by the engine in the field of a powerful electro-magnet, and the disk in cutting the magnetic lines causes eddy currents, tending to retard its rotation. By mounting the magnet on suitable antifriction bearings, torque can be measured directly. I do not know that this form of brake has ever been applied to the test of gasoline engines, but it has simplicity in its favor and is the electro-magnetic analogue of the water brake.

Still another method of loading gasoline engines for commercial test is employed by one manufacturer. Engines are belted to a line shaft and their power is utilized to do useful work in driving machinery of the factory. Where large numbers of engines require testing and are being manufactured at a regular and uniform rate, it would appear that this is an economical method of test. Many manufacturers of gasoline engines for motor cars attach them directly or by means of a flexible coupling to an electric generator of suitable size. The field of the generator may be separately excited and controlled at will. It is usual in such cases to absorb the output of the generator by means of a water rheostat, although a large cast iron resistance may be used if desired. In order to obtain the brake horsepower of the engine, voltmeter and ammeter readings must be taken. The speed in revolutions per minute must also be read from a tachometer. The product of voltage and amperage will give the kilowatt output, and noting that 746 watts represent an electrical horsepower, it is only necessary to divide the output of the generator by its efficiency for the speed at time reading was taken.

It will be seen that this is a somewhat complicated method, owing to the number of readings required and the large number of variable factors makes it less desirable than the cradle dynamometer method. A correction is frequently necessary for both voltmeter and ammeter, and the brush or bearing friction may change, thereby affecting the efficiency of the generator. Again, results depend largely on the accuracy of the original test from which the characteristic curve was derived. For commercial work the electric generator may be used with reasonably good results, but it is not recommended in the development of new engines or important investigations requiring accuracy. Commercial test is understood to mean the running of an engine for several hours under constant full load. The electrical energy thus generated may be utilized for factory power or lighting circuits.

So far it has been my object to review briefly the history of the dynamometer in general, and to describe in a few words some of the many forms used for testing gasoline engines. It is not claimed that the list is complete or the discussion exhaustive, for the subject of this paper limits its scope to a description of the cradle dynamometer and what has already been said is only by way of preface to indicate the steps which led up to it.

The Electric Cradle Dynamometer

When the early electric motors were being developed about 1884-86, it is recorded that the cradle dynamometer was devised by Professor Brackett as a more accurate means for ascertaining the stray power factors than the Prony brake, and since this form of dynamometer consisted essentially of a cradle upon which was mounted the electric motor to be tested, there can be little doubt as to the approximate date of its origin.

It should be explained that the early Brackett dynamometer, while embodying the principle of the modern cradle type, differed in that the motor under test was supported bodily in a frame work which was free to rock through an angle sufficient to permit measurement of pull at the end of an arm. A leather belt was employed to transmit power from the motor pulley to a line shaft. It will readily be seen that this method would be awkward and impracticable for the test of gasoline engines. The principle was correct and the only change necessary was to consider the electric motor as a generator to be used for loading the engine, which is connected by means of a flexible coupling to the shaft rather than by a belt.

In designing electrical apparatus there are many comparatively small factors such as brush friction, bearing friction and windage, I^2R and iron losses, each of which has to be carefully considered in order to obtain machines of high efficiency. All this called for greater refinement in making power measurements than had heretofore obtained, and the cradle dynamometer was found to have the required nicety for the purpose. Manufacturers have continued to use the cradle dynamometer, modified and improved, for so-called special test in studying the characteristics of new motors and generators.

Advantages of Cradle Dynamometer

It may be asked what are the peculiar advantages of this form of dynamometer?

First — All variable factors are entirely eliminated and it is only necessary to read the pull of the brake arm and note the rotative speed.

Second—Load can be held steadily at any desired point within the limits of the dynamometer, for an indefinite time.

Third—This dynamometer is of the absorption type, but the load is dissipated in a suitable rheostat at any desired distance from the dynamometer, which itself only reaches moderate temperature.

Fourth—The cradle dynamometer can be used to measure transmission losses, friction of bearings or other mechanical parts, and the effect of various lubricants.

Fifth—As applied to the test of gasoline engines it may be used for starting the engine.

Some may consider that a well designed water brake has most of the advantages above set forth, but it is certain that the electrical construction presents the greatest possible simplicity. In this, as in all matters, it will undoubtedly be a case of survival of the fittest.

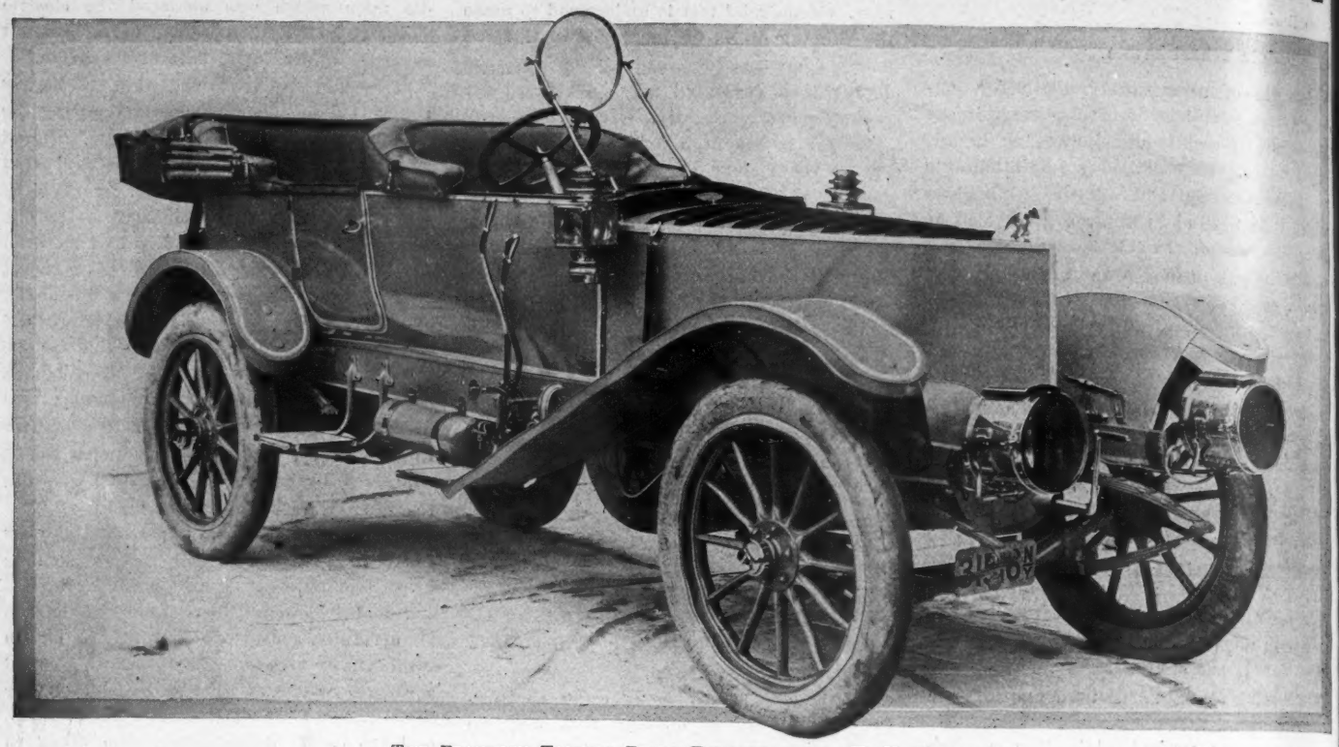
Commander Krebs, of the Panhard & Levassor Co., appears to have been one of the earliest users of the cradle dynamometer for testing gasoline motor car engines and several members of this society have made use of it, for a number of years, with success.

(To be continued.)

ELECTRIC COUPE EXPERIMENTS

Indianapolis, Ind.—Editor Motor Age—Some interesting experiments were recently conducted by us in order to illustrate the different mileage that may be obtained from the same car with different equipment and under different road and service conditions. A Waverley coupe, model 70-C, with regular 1910 equipment, including thirty cells, eleven-plate battery, was sent with two passengers from Indianapolis to Noblesville and return, 51 miles, over ordinary country roads with several steep hills, and was then run about Indianapolis streets until the battery was discharged to normal figures. The mileage at the end of the run was found to be 65.9 miles, a distance somewhat in excess of the mileage this company claims for its cars in regular service. Two days later the battery in the same car was exchanged for a thirty cell, fifteen-plate battery, no other change being made in its equipment, and the coupe was sent, again with two passengers, about Indianapolis streets for 90.1 miles on one charge. This is exceptional mileage for an electric coupe with wood top and guards and completely furnished for regular service. On the following Tuesday the same car, with thirty-two cells, fifteen-plate battery, and no other change in equipment, was run from Indianapolis to Terre Haute, 76 miles, over country roads, and then driven about the streets of Terre Haute 10 miles further, making a total of 86 miles on one charge without exhausting the current in the battery. All of these runs were made at a speed of 12 to 14 miles an hour, which is the usual speed maintained in ordinary service. Now compare these performances with that of the same type of car having a thirty-cell, fifteen-plate, battery, but without coupe top, stripped to reduce weights and wind resistance, and carrying only the driver, when the car made 142 miles without recharging.—Waverley Co.

FRANKLIN INTRODUCES TORPEDO BODY



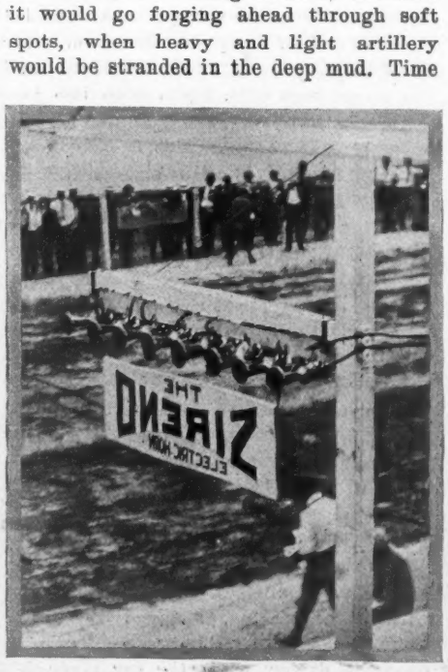
THE FRANKLIN TORPEDO BUILT EXPRESSLY FOR H. H. FRANKLIN

THE H. H. Franklin Mfg. Co., Syracuse, N. Y., has brought out for the personal use of H. H. Franklin, head of the company, a torpedo type of car which is illustrated on these pages, showing side, three-quarter and front views. The car, as the front view shows, is cigar-shaped, thereby presenting as little resistance to the air as possible. The chassis carries a regular six-cylinder motor of 42-horsepower, 1910 type. The body of the car offers several innovations, the first being the circular windshield, with its glass a foot in diameter and supported by an adjustable standard close in front of the face of the driver. Both front and rear seats are very low and the aluminum body, painted in battleship gray and striped with another tint of gray, gives a characteristic effect. This body type is not unlike that developed in Europe some time ago and designated the dustless design, the exterior being smooth as the hull of a boat there is nothing to catch the dust. A factor in this dustless construction is continuing the body size flush with the top of the dash so that the front seat passengers are housed in to the same extent as the two in the tonneau. At the front, however, there is but one door for the two passengers, whereas the tonneau has a door on each side. The fenders are new, in that the running board is absent and the protection over the rear wheel is very small. A complete equipment is furnished with this car and the electrical equipment includes speedometer light and small electric lights, auxiliary to the side oil lamps. The new type of body already has excited considerable comment since it has been put on the road by Mr. Franklin.

MOTOR UTILITY DEMONSTRATED

(Continued from page 24)

would have been able to advance considerably farther towards Boston that day. In other encounters it was estimated that this one truck did the work of a whole battalion of artillery. Driving across fields and acres of soft cranberry bogs, this car could seize a point of vantage and start blazing away long before the artillery divisions could be lined up. The most remarkable thing about it was that it would go forging ahead through soft spots, when heavy and light artillery would be stranded in the deep mud. Time and again the gunners composing its crew would be told that certain roads were utterly impassable, and the driver would laugh at the idea and slam ahead, not always maintaining a 12-mile an hour clip, but "getting there," nevertheless.



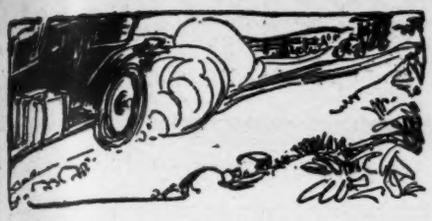
SIRENO HORN AT SPEEDWAY

Army Officers Surprised

In short, the recent "war" was an eye-opener for army officers, so far as the commercial vehicle is concerned. The abilities of the touring car are well known to the public, but the commercial car's usefulness is not so familiar. One point which was especially made manifest and drummed into the heads of commanding officers at the war, was the feasibility with which a regiment on a forced march could be transported with the aid of a number of motor trucks. A car with a carrying capacity of forty men with guns and haversacks, could cover in 2 hours the ground that it would take infantry a whole day to get over. If in such cases thirty trucks were available, a whole regiment of infantry and their baggage could be transported between 50 and 75 miles in a single day.

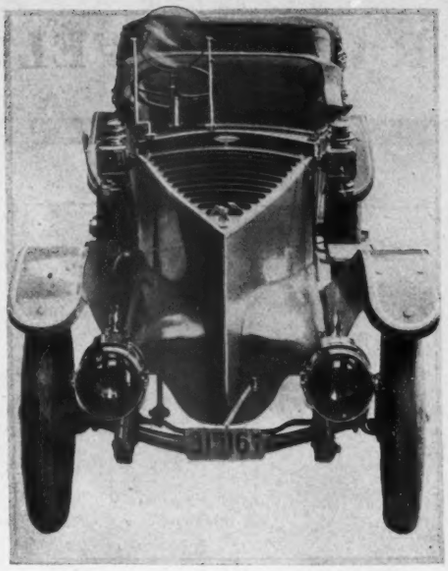
What the Whites Did

Most prominent of these users of the motor car was General Leonard Wood, commander of the department of the east, who acted as chief umpire and had super-



vision over the maneuvers. As one would say in motor parlance, he was chairman of the contest board. General Wood used a White steamer throughout the week and in it he visited each day the encampment of each regiment on either side, always accompanied either by members of his staff or by the military attaches from the legations at Washington. At the conclusion of the maneuvers General Wood said that he had traveled an average of 150 miles a day, that he was more than pleased with the service rendered, and that it was only through the use of the motor car that he had been able to keep fully in touch with what was going on. This is surely a significant statement coming from the officer who is the ranking general of the United States army. It shows that the former prejudice against the motor car has quite disappeared. The writer remembers that at the military maneuvers in Pennsylvania, 3 years ago, General Fred D. Grant declined to ride in a motor car on the ground that it was not dignified for one of his position to travel about the camp except on horseback. The maneuvers in Pennsylvania covered a very limited area and it was therefore possible for the commanding officer to make his rounds of inspection on horseback.

No fewer than five White steamers formed a part of the military equipment of the Blue army. Three of these cars were attached to the headquarters of Brigadier-General Pew, commander of the Blue army, and were used by him and his staff almost continuously in carrying orders to his widely-scattered forces. There is no doubt that, had it not been for these cars, General Pew would have made a less effective defense of Boston than he did, for his troops were spread out in a thin line of defense from the seacoast to the



FRONT VIEW OF FRANKLIN TORPEDO BODY

Taunton river. During the first 2 or 3 days, all of the camps were in touch with General Pew's headquarters by means of telephone wires rigged by the signal corps, but in the later days of the maneuvers the Blue army did not have any time for such operations and General Pew relied entirely upon his White steamers to keep in touch with his scattered forces, for be it remembered, the rules of the game created the friction that all ordinary means of transportation and communication were destroyed and the armies were thrown entirely upon their own resources.

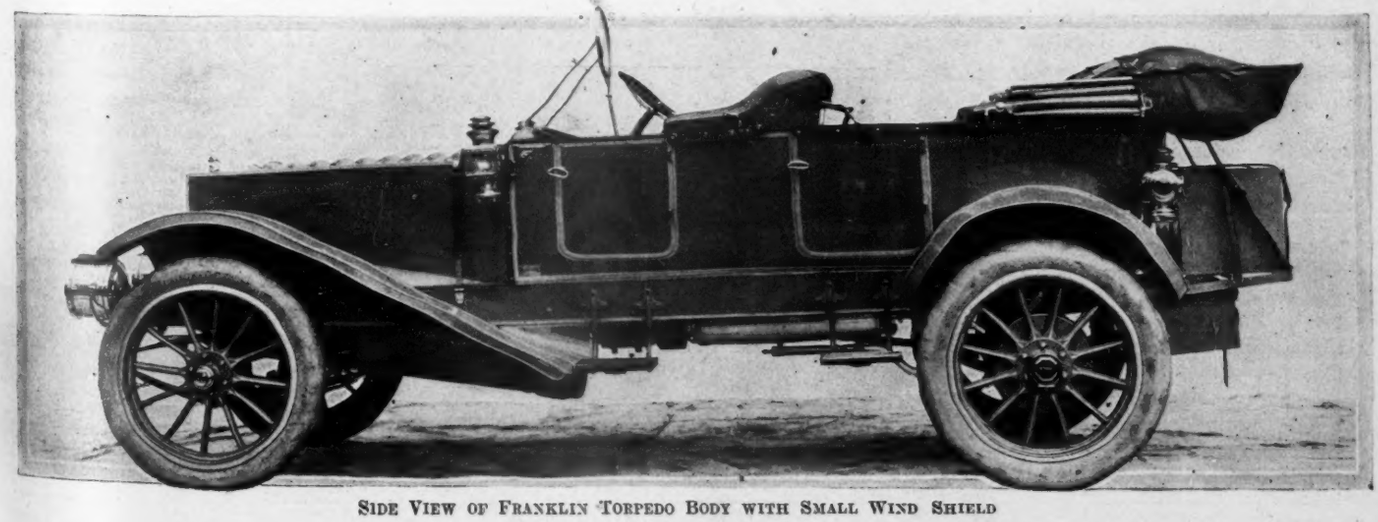
Quite as much appreciated by the Blue army was the White ambulance, attached to the division headquarters, and there was no make-believe about the work of this car. Although no bullets were flying about to bring injuries to the contending armies, the hospital corps on each side was kept busy, treating cases of heat prostration and the ordinary ailments to which flesh is heir. In the Blue army of 7,000 men, such cases manifested themselves very frequently, and it is not surprising that it was found necessary to have two chauffeurs for the motor ambulance, as it was in practically constant service. Quartermaster-Sergeant Hathaway drove his White steamer, using kerosene as fuel, and, as he was in charge of getting supplies to the division headquarters, it can be readily imagined how useful this car proved itself.

Probably fifty or sixty officers of the regular army were present at the maneuvers, serving in the capacity of umpires, observers, or as advisers to the respective armies, and the work of these cars during the maneuvers was thus brought forcibly to the attention of some of the most active officers on the roster of the war department.

Major General Bliss, the head of the war college at Washington, was in command of the Red army, and Brigadier General Pew, of the Massachusetts militia, led the Blue army of defense. The first position of the Blue army was in an east-and-west line extending from Taunton to the coast. On Monday, General Bliss made such a disposition of his army as to indicate that he intended to attack the right flank of the Blues. Immediately General Pew started to concentrate his troops on his right. This move on General Bliss' part, however, was only a feint and on Tuesday he suddenly shifted his troops and by forced marches moved against the weakened left flank of the Blus arm which, at the close of the day, he had effectually penetrated. It was a case of the entire Red army massed against a single regiment of the Blues, and there was nothing for the umpires to do but to declare the regiment of Blues anihilated.

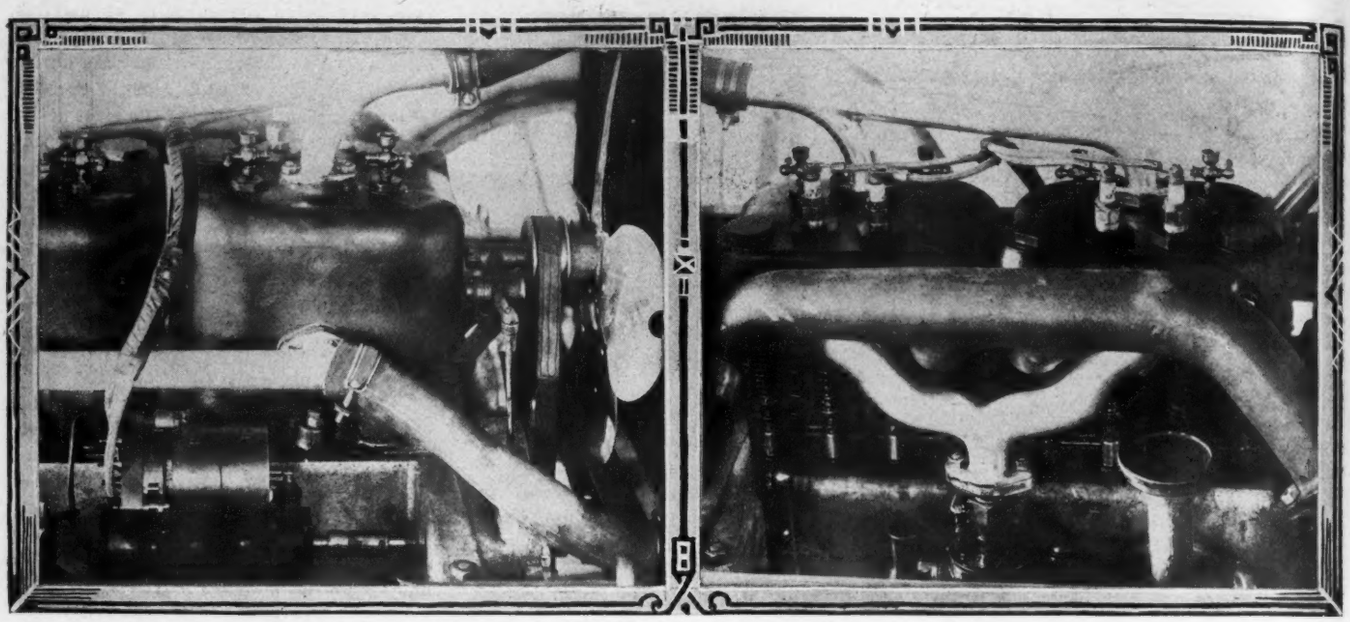
SIRENO SIGNAL HORN

The Sireno Co., New York, has of late devoted its horn to a novel use, viz., that of having it made the official signal at the Brighton Beach races as well as at the Indianapolis motor speedway. The Sireno electric signal at Brighton Beach was a single horn, whereas at Indianapolis it was, as illustrated, a bank of sixteen individual horns. These were supported on a cross piece, in turn carried on a standard at the side of the track so that the electric wires operating connected with the judges' stand whence the signals were given.



SIDE VIEW OF FRANKLIN TORPEDO BODY WITH SMALL WIND SHIELD

MOTOR CAR DEVELOPMENT



FIGS. 1 AND 2—BADGER MOTOR WITH TWIN-CYLINDER CASTINGS AND MAGNETO IGNITION

THE Badger Motor Car Co., Columbus, Wis., has been organized recently and enters the field of motordom with a light touring car equipped with a short-coupled, four-passenger body which is neat and racy in appearance. Its distinguishing features are its unit powerplant, which consists of a four-cylinder, four-cycle, L type motor, cooled on the thermo-syphon principle and employing a Bosch magneto with set control; and a leather-faced cone clutch enclosed with the flywheel in a case cast integral with the crankcase, to which is attached the case of the clutch and change gear mechanisms. The motor is simple and neat in design, and its fittings are practically attached and distributed, as may be seen from the side view in Figs. 1 and 2. As shown in Fig. 2, the features of the left side of the motor are clearly portrayed. The dimensions of the intake and exhaust manifolds, the simplicity of their design and arrangement, and the accessibility of all the parts can be noted. The valves are operated from the camshaft, which is enclosed within the crankcase, by means of the adjustable pushrods. The camshaft gear is enclosed in an oil-tight case cast integral with the forward end of the aluminum crankcase. Just behind the front leg of the motor is a ball gauge which shows the level of the oil in the crankchamber. The Schebler carbureter used is conveniently located, as is the large funnel-shaped breather, through which the oil is poured to replenish the supply in the crankcase. Lubrication of the motor is self-contained splash, the oil reservoir is part of the crankcase, and the level between the two is maintained by a pump. The spark-plugs are located over the intake valves of the motor, and priming-cocks are fitted in the cylinder heads. Fig. 1, which is a view of the right side of the motor, brings out the features of the cooling and ignition systems, and the direct connections which prevail between all component parts is indeed a commendable feature. The water manifolds are very plain and the hose connections long and flexible and the fan is attached to the front cylinder of the motor by means of a self-adjusting bracket which maintains a constant tension on the driving belt. The magneto, which is gear driven, is conveniently located. As there is no control to this ignition system it is probably the most simple extant. The carbureter control is partially shown in this view, attached to the steering gear in the left hand corner of the illustration.

Although the clutch is designed to run dry, the clutch mechanism and the gears of the transmission operate in a bath of oil or grease. The gears are open-hearth forgings, and F. & S. ball bearings are employed in the gearcase. The only universal joint in the propeller shaft is located behind the gearcase and is enclosed in a grease-tight case. A pressed steel frame of channel section is employed,

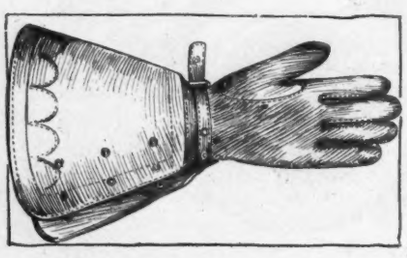


FIG. 3—A NEW PRICE GLOVE

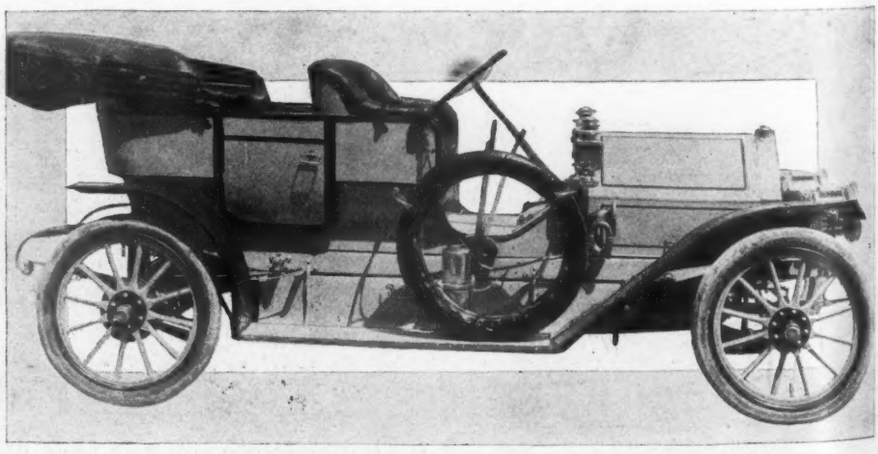


FIG. 4—SIDE VIEW OF BADGER FIVE-PASSENGER TOURING CAR

BADGER—A NEW WESTERN CAR

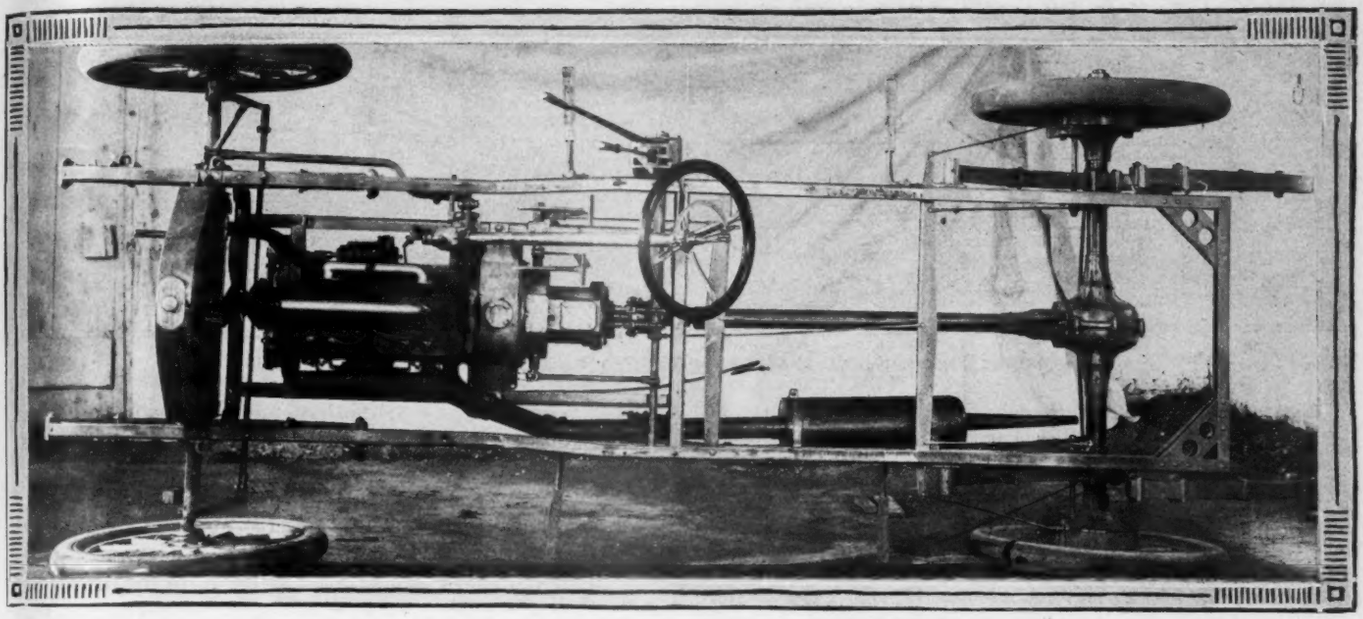


FIG. 5—TOP VIEW OF CHASSIS OF NEW BADGER MOTOR CAR

which is supported on semi-elliptic springs in front and three-quarter ellipticsin the rear. It is raised just in front of and over the rear axle to give ample clearance for spring action, and is narrowed slightly in front of the dash to reduce the turning radius. The spring ends are bushed with bronze and all spring shackles and bolts are case hardened and equipped with grease-cups. The front axle is a one-piece forging of I-beam section, and the rear axle, which is of the semi-floating type, is so designed that the bevel-gear differential and main driving-gear may be removed without dis-assembling the axle. There are two sets of brakes of the external and internal type acting on the rear wheel drums, and pressed steel equalizers are provided to distribute the braking service equally on both wheels.

The steering gear is of the irreversible worm and gear pattern, with the drag-link behind the front axle. The control is conventional, except that there is no spark lever; the motor is controlled by means of a throttle over the steering-wheel, and a foot accelerator; the clutch is operated by means of a pedal, as is the external or service brakes, and the gear-change and emergency-brake levers are at the right of the driver's seat.

OLDBERG MUFFLER

The Oldberg Mfg. Co., located at Detroit, Mich., is manufacturing a muffler for which great efficiency is claimed, inasmuch as it is a perfect silencer and so constructed that back-pressure on the motor is eliminated. It consists of a series of 6 steel expansion chambers, cylindrical in form and arranged eccentrically with respect to the center of the muffler, as shown by the cross-section in Fig. 2. As illustrated in Fig. 3, the openings in the chambers are arranged in two rows throughout the entire length of the muffler, and are of ample size to provide the shortest possible travel of the gases during expansion, thereby offering the least possible resistance. The gas is expanded in six stages, in order to absolutely eliminate the sound waves and at the same time maintain a perfectly natural expansion.

The gases from the motor enter through the central opening E, Fig. 7, into the central chamber A, which extends the entire length of the muffler. Along the top of chamber A is a double series of openings which lead into chamber B, Fig. 6. These enter the smallest part of chamber B and following the course of the arrows gradually expand because of the eccentric shape of the space B as shown in Fig. 6. The gases escape from compartment B through two rows of openings B1, where it is radially deepest, and enter chamber C at C1, where it is smallest radially. The expansion in chamber C is the same as in chamber B; and from chamber C to E and to the final exit E1 the system of expansion is progressively carried on.

A NEW PRICE GLOVE

Motorists may be interested to know that the Fried-Osterman Co., Rockford, Ill., has placed upon the market a new Price glove with adjustable cuffs. It is claimed that these gloves possess all the advantages of the ordinary motorist's glove, and the new flaring cuff may be easily adjusted to fit any sleeve and render them dustproof, by means of a strap and metal snaps.

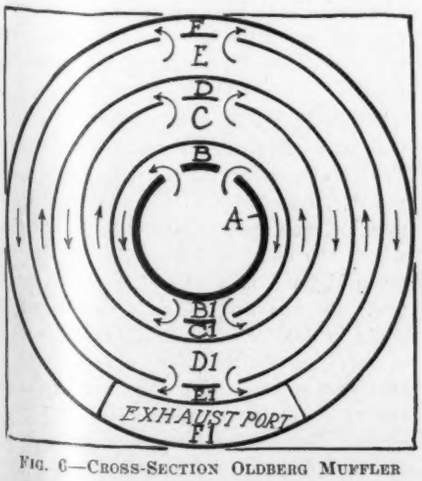


FIG. 6—CROSS-SECTION OLDBERG MUFFLER

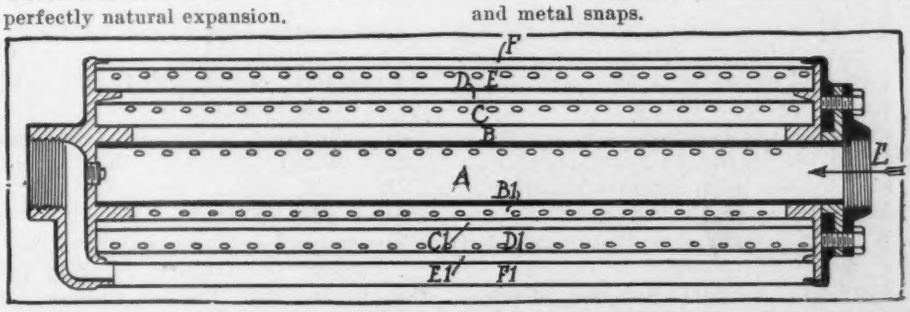


FIG. 7—LONGITUDINAL SECTION OLDBERG MUFFLER

PHOTOGRAPHS SHOWING RECENT ADDITIONS MADE TO CHALMERS-DETROIT PLANT IN DETROIT

Benjamin Closes With Studebaker—C. Arthur Benjamin has just closed to handle the Studebaker E-M-F in Syracuse, N. Y.

Standard Company to Build—The Standard Automobile Co., of Pittsburg, will let contracts shortly for a three-story garage and sales building at Grant boulevard and Bellefield avenue. The site cost $13,000.

Murphy Changes—William J. Murphy, who has been connected with the Highland Automobile Co., of Pittsburg, for a long time, will hereafter devote his time to selling the Cadillac, handled by the Motor Car Co.

Stoddard Branch for Seattle—The Dayton Motor Car Co. is to be represented in Seattle by a branch house during the season of 1910 under the management of Ira D. Lundy. Mr. Lundy is now making an effort to find a location for his headquarters.

Closes for the Hupmobile—A contract has been closed for the 1910 Hupmobile agency in Indiana by the Hearsey-Willis Co., Indianapolis. The same company will also handle the kerosene-burning White, Mitchell, Rambler and Waverley line of electrics next season. Recently the company has added a line of motor cycles.

May Revive Twyford Works—Another effort will be made shortly to operate the Twyford Motor Works at Brookville, Pa. New York capitalists have secured control of the plant, which has been down about 5 years, and are fitting it with a view to employing at least fifty skilled mechanics. They will make a specialty of motor car machinery and plow attachments.

Parker Company Incorporated—A certificate of incorporation has been filed by the Parker Motor Co., of Hartford, Conn. The amount of authorized capital stock is $50,000 and business will be started with $1,000. The incorporators are Lucius F. Robinson, Albion B. Wilson and Francis W. Cole. These same have also filed a certificate of organization. The officers are: Lucius F. Robinson, president and treasurer, and Albion B. Wilson, secretary. The new concern will manufacture engines for motor cars.

In a New Garage—The C. F. Bullwinkel estate, district agent for the Studebaker and allied lines at Jefferson, Wis., now occupies its new garage, which includes large offices and a big supply department.

Studebaker Offices Moved—The executive offices of the Studebaker Automobile Co. will be transferred from Cleveland to South Bend. The personnel of the organization will remain the same as heretofore announced.

Carter Goes to Factory—E. W. Carter, who has for some time past been in charge of the Boston office of the Hoyt Electrical Instrument Works, will hereafter be connected with the factory and A. K. Brown will succeed him in charge of the Boston office.

Worcester Has New Company—The Franklin Square Garage Co., of Worcester, Mass., has been incorporated under the Massachusetts state laws with a capitalization of $35,000. Archibald R. Davis, of Oakdale, Mass., is president and treasurer of the company.

May Locate at Newell—The North American Mfg. Co., which is promoting the new town of Newell in West Virginia, has practically closed negotiations with a New Jersey concern that will erect a large factory for the manufacture of porcelain sparkers. The company also will build a motor car factory and will employ about 100 men. The concern already has a factory in Newark, N. J.

Rush Stearns Work—Under a forfeit of $100 a day work is now being rushed on the new four-story brick and concrete addition to the F. B. Stearns Co. factory in Cleveland, O. Under terms of the contract machinery in the new building must be in running order by September 15. For the past year the Stearns factory has been badly cramped because of lack of room, the machine and forge shops being particularly hard hit. The new addition, 120 by 180 feet, will materially aid the production department and provide for much quicker delivery.

Will Sell Gas Tanks—The Milwaukee Prest-O-Lite Co. has been formed in Milwaukee, Wis., and headquarters have been established at 192 Fifth street. Walter L. Ebert is manager. A re-charging station has been installed.

Bowen Goes With Simplex—Frank H. Bowen has joined the sales force of the Simplex Automobile Co. at the new headquarters, 1860-62 Broadway, New York, and will bend his efforts in the future towards looking after the interests of the Simplex.

Premier Building Plant—The Premier Motor Mfg. Co., Indianapolis, has prepared plans for a new factory building, construction of which is to be started immediately. It will be two stories high, of brick construction, and will be 226 feet long and 55 feet 6 inches wide. Because of the increased business during the last year the company has found it necessary to find additional space.

Bowser Plant Growing—S. F. Bowser & Co., of Fort Wayne, Ind., who had up to the first of the year shop floor space of 65,000 square feet, have recently let contracts and buildings are now under construction for exactly double this space. Contracts have been let for 320-horsepower gas engines of the latest and most improved type, also one of the latest gas-producing plants with which to manufacture their own gas to supply their engines.

Seattle Taxicab Service—The Seattle Taxicab Co.'s service is proving extremely popular, especially to visitors to the Exposition who are familiar with other cities, where the charges for similar service are much higher. In Portland the rates are 50 cents for the first ½ mile as against 30 cents in Seattle. The San Francisco scale is 50 cents for the first mile for one or two passengers, while the Seattle charge for three or fewer passengers is but 30 cents. The thirty-five taxicabs now in

service are obliged to work overtime in order to handle the large number of visitors and others.

Gets P. & S. Agency—The Palmer & Singer agency in Washington, D. C., has been given to the L. D. Moore Co., 829 West Fourteenth street.

Titus' New Job—Fred Titus has made an alliance with the sales force of the Palmer & Singer Mfg. Co., and on September 1 will begin duty as assistant sales manager in charge of out of town territory.

Syracuse Concern Moves—The Syracuse Motor Car Co., of Syracuse, N. Y., has just moved into its new $10,000 garage and show room on West Genesee street, where it will handle the Winton, Ford, Overland and Pullman cars for 1910.

Is Parts-Making Concern—James E., Thomas and Frank P. Murray, of Pittsburg, and Bruce Clarke and A. H. McClurg, have formed the Murray Safety Wheel and Axle Co., which will manufacture motor car wheels, axles and several other parts.

Joint Picnic Held—Employes of the Mitchell Motor Car Co., Racine Mfg. Co., Pierce Motor Car Co. and Piggins Brothers Co., of Racine, Wis., and Thomas B. Jeffery & Co., of Kenosha, Wis., held their first annual joint picnic at Central park, Racine, on August 22.

Winton Now in Indianapolis—Charles S. Calvert has opened headquarters for the Winton at the Meridian place garage in Indianapolis. The Winton, some years ago, was represented in Indianapolis by the Indiana Automobile Co., but for the last year or so has not had an official representative in that city.

Adding to Garage—Protheroe & McGinnis, of Baraboo, Wis., are building a large addition to their garage on Third avenue. The building will be of solid brick, 44 by 90 feet, and will be used exclusively for storage and livery. The present building, 24 by 72 feet, will be used for exhibits, accessory department and repair shops.

New Appleton Concern—The Auto Sales Co. has been organized at Appleton, Wis., by a number of business men to sell motor vehicles, equipment, supplies and accessories in the Fox River valley. The company has contracted for the agency for the Kisselkar in that territory. Herman G. Saecker is president, J. L. Wolf vice president, P. M. Conkey secretary, Samuel J. Ryan treasurer.

Change of Name—The Lucia Brothers Motor Car Co. is the new name of the well known Green Bay, Wis., agency and garage firm, which was established under the name of Lucia Cycle Co. in 1888. The company is probably the largest dealer in motor cars in Wisconsin, exclusive of Milwaukee, and besides its main garage at 218-220 North Adams street, Green Bay, has a large branch garage at Oconto and branch agencies in several other large cities in northeastern Wisconsin. The company is representative of the Chalmers-Detroit, Hudson and Thomas.

Protected From Fire—The entire plant of the Mitchell Motor Car Co. of Racine, Wis., located at Racine Junction, is now under the protection of a sprinkler system, a patent automatic fire-fighting appliance.

Garage for Monongahela—William M. Landefield, of the Eureka Machine Co., will establish a large garage at Monongahela, Pa., this month. He has secured the agencies for the Chalmers-Detroit, Hudson and Lozier.

Selling De Tambles—The Speed Sales Co., 1256 Michigan avenue, Chicago, has take the sole sales of the De Tamble car made by the Speed Changing Pulley Co., Anderson, Ind. The output of these cars for next year is estimated at close to 11,000.

Mitchell Increases—The Mitchell Motor Car Co., of Racine, Wis., has increased its capital stock from $1,000,000 to $2,000,000, an amendment having been filed with the secretary of state last week. The additional issue is simply to keep pace with the growth of the company, it is stated at Racine.

Beaver Prosperity—Thomas J. Neacy, president of the Filer & Stowell Co., Milwaukee, Wis., owner of the Beaver Mfg. Co., declares the Beaver works have a full year's work ahead. The output for the year ending October 1 will be 50 per cent greater than for the year preceding. New equipment is being added to double the capacity for 1910, begining with October 1.

Stevens After Land—The Stevens-Duryea company at Chicopee Falls, Mass., is negotiating for land along the Athol branch of the Boston and Albany railroad for the purpose of building a testing track. The company has had the matter under consideration for some time. It desires to secure a strip at least 100 feet wide and about 2 miles long. An option has been secured upon one strip of land nearly that distance that has a hill on it, and this may be secured. In that event it will take the testing cars off the highways.

Redding Columbia Designer—C. F. Redding has been appointed designer of the Columbia Motor Car Co. Under the old regime, Mr. Redding served in a similar capacity under H. P. Maxim with the Electric Vehicle Co.

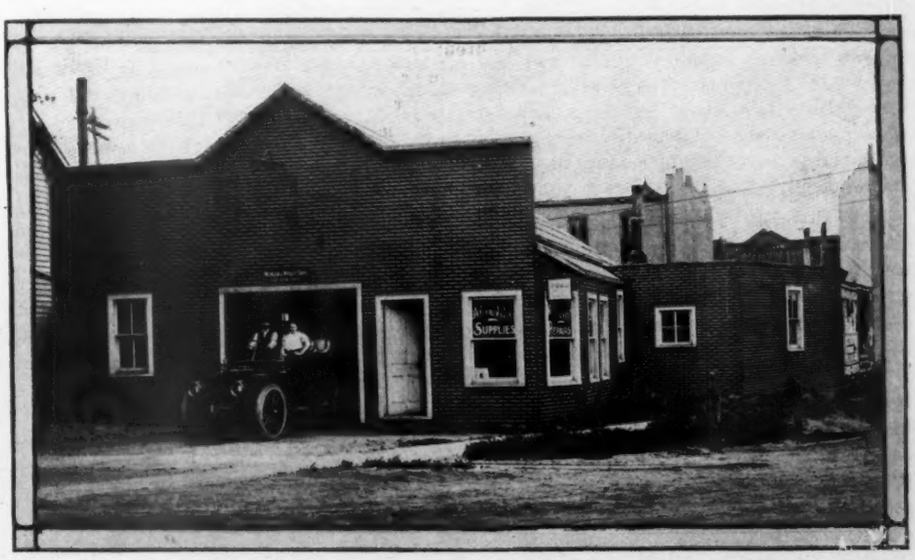
Fisher Made Manager—Fred W. Fisher has been appointed manager of the Pittsburg branch of the Croxton-Keeton Motor Car Co., of Massillon, O., which was formerly known as the Jewel Motor Car Co. He will be located at 5922 Baum street.

Timken Output Increased—The Timken Roller Bearing Co., Canton, O., is increasing its plant 100 per cent for the coming season. These bearings are being used in 1910 models for the first time by several of the largest car manufacturers in the country.

Buys a Big Building—The Shawano Auto Co. of Shawano, Wis., a new garage and sales agency, has purchased the Mehlhorn building at Shawano and are remodeling it to suit its purposes. It is one of the best buildings in the city and centrally located, and will be opened about July 15.

Parry Plant Busy—The Parry Automobile Co. has its new factory in Indianapolis in full swing and will begin delivering cars October 1. The company was organized July 28 and announces it will manufacture 5,000 cars for the 1910 season. These will consist of a four-cylinder 30-horsepower roadster and of a four-cylinder 30-horsepower touring car.

Long Run of Test Car—The 1910 model Rambler touring car, sent out from the factory at Kenosha, Wis., for a test run on July 22, arrived at Kenosha on August 16 after having covered more than 3,900 miles in 24 days. Agents of Thomas B. Jeffery Co. piloted the car from city to city, starting at Kenosha, then to Indianapolis, Louisville, St. Louis, Kansas City, Lincoln, Omaha. C. Steward, agent at Omaha,



NORTHWEST GARAGE AT CHEROKEE, IA., WHERE FRANKLINS ARE SOLD

drove the car from that city to Kenosha without relief. After being overhauled the car will be sent to Kansas City to compete in the Kansas City endurance run.

Busy at Anderson—The Rider-Lewis Motor Car Co. is now installed in its new factory at Anderson, Ind., and has begun turning out its 1910 cars, the first of which was completed within 15 days of the installation of the new factory.

Handling the Ford—Blodgett & Holmes, of Janesville, Wis., have been appointed agents for the Ford in Rock county, and enough sub-agencies have been established to cover every part of this territory. The garage is under the management of William Alderman.

Located at Natrona—A new motor car concern at Natrona, 10 miles up the Allegheny river from Pittsburg, is Eaton & Humes, who have built a large garage on Second avenue and will have a complete repair shop in addition to the agencies for the Hudson, the Hupmobile and the Chalmers-Detroit.

Lloyd Is Recuperating—George H. Lloyd, sales manager of the Velie Motor Vehicle Co., Moline, Ill., who has been incapacitated for some time by typhoid fever, has now reached the convalescence stage and will be back at his desk in about 3 weeks. In the meantime he will recuperate in the Rocky mountains.

Browne Company Formed—The George W. Browne Motor Co. of Milwaukee, Wis., has been incorporated with a capital stock of $10,000 by George W. Browne, T. C. McMillan and Jennie O. Browne. The company succeeds to the agency of George W. Browne, who succeeded the Browne-Friend Motor Co. some months ago. The company is handling the Mitchell, Marmon and Holsman. The garage and salesrooms are at 228-230 Wisconsin street, Milwaukee.

Consolidation of Interest—The Aluminum Casting Co. has acquired the properties and business of the Allyne Brass Foundry Co. of Ohio, the Allyne Brass Foundry Co. of Michigan, the Allyne Brass Foundry Co. of New York, the Syracuse Aluminum and Bronze Co., the Eclipse Foundry Co., and the foundry department of the United States Aluminum Co. It is the intention of the Aluminum Castings Co. to continue to operate these plants under the same management.

New Firestone Idea—Not content with the exclusive clincher demountable rim which it has had for 3 years, the Firestone Co. has added quick detachable features and offers the 1910 rim as a radical improvement. The present rim requires no staybolts and permits of quicker and easier changes of tire on detachable rim. Should the motorist have more than one puncture, repeated changes may be made while the tire remains on the wheel under precisely the same conditions as if demountable rims were not used, it is claimed. A feature is that raw wheels may come equipped with the base pieces of this rim and any desired clincher or quick detachable tires may be added without further alteration to wheel.

Bergers Branch in Kansas City—The Bergers Automobile Co., a branch of the Omaha firm, is temporarily located at 1604 Grand avenue in Kansas City, with the Fisk Tire Co. This firm will handle the Halladay and the Whiting.

Increasing Bus Service—A stock company is being formed at Shelby, O., to purchase and operate another motor car between Shelby and Bucyrus. This gives the company two cars, both of which will in the future make additional trips to Shiloh and Olivesburg.

Adds a New Line—The H. Lange Wagon Co., of Pittsburg, which was established in 1875, has just added a new department to its wagon business. The company has decided to use the Gramm-Logan chassis for its motor trucks and cars. Elias Lange is president and C. G. McCormick manager of the company.

Has a New Name—The Pioneer Motor Car Co., of Pittsburg, which is succeeding the Bankers Brothers company, has elected the following officers: President, Charles M. Miller; vice president, F. T. F. Lovejoy; treasurer, I. Guy Davis, and manager, W. J. Lewis. The new company will take over all the buildings of the old concern and will have the Lozier, Chalmers-Detroit and Hudson.

Badger Building New Factory—The Badger Automobile Co., Columbus, Wis., has started work on the erection of its factory. The building will have dimensions of 50 by 150 feet, two stories high, of solid brick construction. The entire floor space will be unobstructed, excepting for walls of the various department rooms. The Milwaukee road has afforded sidetrack facilities direct to the shops. The company expects to occupy the factory about November 1.

Building Expensive Garage—Work has recently commenced on the new home of the Winton Motor Carriage Co. in Seattle, which will represent an investment of $150,000. The new building is to be six stories high, with a basement and subbasment, eighty feet in Pike street and 110 feet in Terry avenue. It will be ready for occupancy about December 1. Perhaps the most interesting feature will be the large roof of 8,800 square feet, which will be used for testing and trying out. The two basements will be used for the storage of cars. A spacious court in the center and set off from the stalls will afford easy manipulation. Each car will have its individual stall. Large lockers will be supplied for the storage of loose equipment. A department will be set aside, separate and distinct from every other, for the use of owners who drive their own cars. A club room with all trade magazines, billiard and pool tables will be maintained for chauffeurs. A complete telephone system will be installed. The executive offices and salesrooms will occupy the main floor. The upper floors will be used for the upholstering department and paint shop.

Mertens Becomes Salesman—Eugene R. Mertens, for some time past assistant superintendent of the Electric Vehicle Co. at Hartford, Conn., has been transferred to the sales force and assigned to local territory.

Will Build Cars—The stockholders of the Findlay Carriage Co., of Findlay, O., at a recent meeting decided to engage in the manufacture of motor cars. The present plant will be enlarged for that purpose.

Simons Makes a Change—Guy O. Simons, of Dayton, O., who has been with the Stoddard-Dayton factory as foreman for several years past, has joined the Dayton Automobile Co., a downtown concern of which Mr. Simons will have full charge.

Will Make Motor Wagons—The Vulcan Motor Vehicle Co., capital $200,000, has secured its charter and is making active preparations to manufacture light delivery wagons at its plant on Kelly street. The promoters of the company are William M. McGonigle and H. B. Ayres.

Seattle Events—F. G. Baender and P. S. Biegler, both of Iowa City, Iowa, have recently moved to Spokane, Wash., where they will shortly open an agency for the White steamer. The Chancler & Lyon Motor Supply Co. is now located at 916 East Pike street. It is under the management of W. A. Avery.

Building $50,000 Garage—The E. J. Thompson Co., one of the newer concerns in Pitstburg, last week bought a site 75 by 110 feet in New Louisa street for $15,000 and is having plans prepared for a $50,000 reinforced concrete garage. The location is only a short distance from the New Forbes field, which is now drawing tens of thousand of people to the ball games.

Philadelphia Changes—The Motor Supplies Co. is the latest comer in Philadelphia. The concern, of which Harry A. Houseman is president, Jacob Bauer vice president and V. McC. Fulton general manager, was organized a fortnight ago and has opened quarters at 332-334 North Broad street. William J. Boyd has been appointed manager of the newly-opened branch of Charles F. Kellam & Co., Invader oils, in Philadelphia, at 648 North Broad street.

Denver Concern Reorganizes—The Overland Automobile Co., of Denver, announces a complete reorganization of the firm's business for the coming season. The firm will retain its old name, but its officers will be changed as follows: President, W. J. Carter; secretary and treasurer, C. B. Campbell; vice-president, T. W. Fugate; sales manager, A. C. Lee. The company will add the Apperson. The company's quarters at 1512-1516 Broadway have been remodeled and redecorated.

News from the Motor Clubs

Club at Abilene—The Abilene Automobile Club has been organized at Abilene, Kan., with sixty charter members. C. M. Harger is to be president and J. T. Nicolay secretary. It is proposed to hold a motor car day at the county fair.

Protecting Colored Chauffeurs—The Cincinnati Automobile Club has taken action to break up a league formed, it is claimed, to drive colored chauffeurs out of the business. The board of governors of the club has instructed the club's attorney, Harry Probasco, to proceed along the most advisable lines to this end and prosecute those who attempt to throw colored chauffeurs into poor repute.

Milwaukee Plans Meet—Tentative plans have been made by the Milwaukee Automobile Club for the third annual contest meeting at State Fair park, Milwaukee, on September 24 and 25. It is possible that October 1 and 2 may be selected. The racing board is arranging a program which may include a 24-hour event. The club has held two of these contests, each being run for 24 full hours with no intermissions. All arrangements have been made with the Wisconsin Board of Agriculture for the use of the big park and track.

New Rochelle Starts Club—The Automobile Club of New Rochelle was organized last night in New Rochelle, N. J., and started out with considerable enthusiasm. There are over 250 owners of cars in this thriving suburb, and the new organization was formed through the efforts of E. T. Birdsall. The new club started out with about fifty members, and will in the near future have its own club rooms and garage. The officers elected were: President, E. T. Birdsall; first vice president, W. B. Ogden, Jr.; second vice president, J. A. Scofield; secretary, F. M. Carpenter; treasurer, F. D. Le Count. The board of governors are A. F. Bradley, T. N. Benedict, G. W. Sutton, E. Eckart, Robert Fox and Dr. G. A. Peck.

Warm New Club House—The North Wildwood Motor Club, of Wildwood, N. J., warmed its new club house last Saturday night. It is a three-story structure at the corner of the speedway and Seventeenth street. A double-deck porch, a roof garden and accommodations for members who may desire to make it their home while at the resort combine to make new quarters of the club well adapted to the members' needs. W. Wayne Davis, manager of the Matheson branch in Philadelphia, is president; Harry C. Wheaton, mayor of North Wildwood, is vice-president; William C. Richardson, treasurer; William E. Young and E. M. Omensetter, secretaries, and Charles Winters, counsel. Many Philadelphians prominent in the motor car trade and press are on the membership list of the new organization.

Will Greet Munseyites—The Quaker City Motor Club will give a rousing reception to the Munsey run tourists when they reach Philadelphia on Tuesday evening, September 21. Frank Hardart, Sr., and A. T. James, of the home committee, have the affair in charge. It will take the form of a smoker and entertainment and will be held in the big banquet hall of the Hotel Walton.

Interclub Match Date Set—The second annual reliability team match between the Chicago Athletic Association and the Chicago Automobile Club will take place September 16, over a 150-mile course that is to be mainly in Indiana. The size of the team is not limited and the affair will be run the same way as last year—a non-motor stop contest, with penalties for repairs, adjustments or replacements and for failure to make controls on time. The first match was won by the athletic club.

Aspire to Be Athletes—Philadelphia is to have an Automobile Trade Athletic Association, composed of denizens of the row, who in their leisure moments will endeavor to demonstrate to similar organizations in other cities just how the national game should be played, and in the proper season circle the ends and buck the center of any gridiron warriors of equal caliber who shall dare to compete with them. J. G. Soulsby, of the Quaker City branch of the Home Rubber Co., and Mr. Keith, of the Diamond Rubber Co.'s branch, are at the head of the new organization. They propose to secure a club house as soon as the membership warrants it.

Taft's Car for Parade—Indications are strong that the motor car floral parade to be given by the Chamber of Commerce of Washington, D. C., assisted by the Automobile Club of Washington, on September 30, will be one of the biggest affairs of the kind ever held in this section of the country. The committee has been practically assured that President Taft's White steamer will head the parade, and it will be followed by the cars of many members of his cabinet, each flying the departmental flag. Then will come the various machines owned by the federal government. Immediately behind the government section will be the Munsey tourists, who finish the run from Washington to Boston and return the day before the parade. There will also be a section devoted to cars decorated with American flags and then will come the floral decorated cars. Commercial vehicles will bring up the rear of the parade. The governors of three states, Mayor Breitmyer, of Detroit, and District Commissioner Macfarland will compose the judging committee. It is expected that a number of near-by cities, including Baltimore, Md., and Richmond, Va., will be represented in the parade.

Assistant Secretary Resigns—The resignation of Herbert M. Sawyer, assistant secretary of the Worcester Automobile Club, of Worcester, Mass., was accepted at the meeting of the board of directors of the organization, and Charles A. Garrity, the club steward, appointed in his place, taking effect at once.

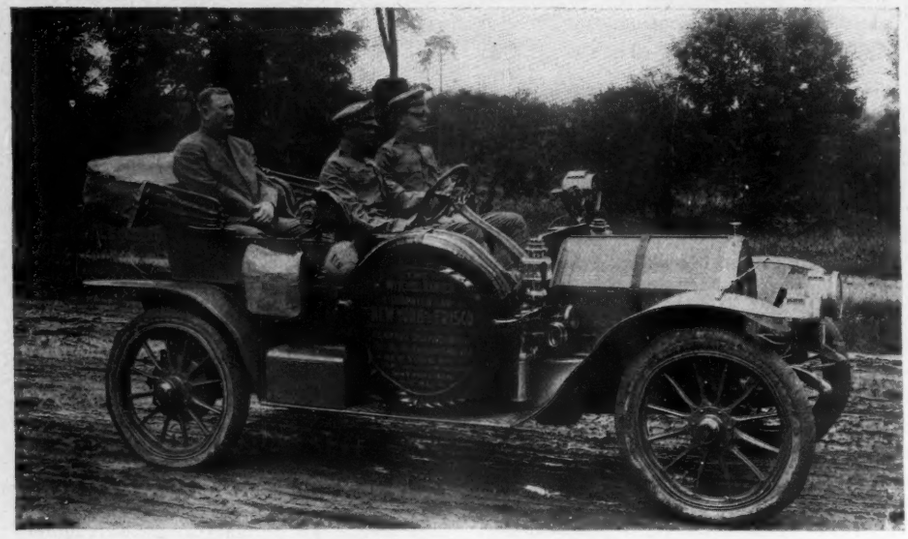
Worcester Remembers Orphans—On August 13, 400 children from the poor section of Worcester, Mass., were given an outing in thirty-five cars to Hadwen park by the Salvation Army, the machines being loaned the army by members of the Worcester Automobile Club and owners throughout the city for the occasion. On the return trip the children were given a 10-mile ride further into the country, returning to the city by a different route. Everyone enjoyed the ride.

Milwaukee's Orphans' Run—Fifty-one cars were required for the sixth annual orphans' day outing given by the Milwaukee Automobile Club on August 19. More than 300 children, the largest number ever accommodated, were given a tour about the city and then taken to Washington park, where business men, commission merchants and philanthropically-inclined women had laid out one of the finest luncheons imaginable. Because of the absence of the mother superior at St. Vincent's orphanage, more than seventy-five children were unable to make the tour and fifty unfortunates at the Polish asylum, who had been counted upon to join, were at the country home. Still, all the others had a good time.

Activity in Ohio—The state motor car department of Ohio has registered 21,000 motor cars. For the month ending August 15 owners to the number of 1,340 secured licenses, paying in $6,569. Chauffeurs to the number of 424 were registered, on which the fees were $848. Manufacturers and dealers to the number of ten secured licenses at a cost of $100. One thousand four hundred and nine owners renewed their licenses at a cost of $6,585. Manufacturers and dealers to the number of twenty-four renewed their registration at a cost of $240. The total revenue for the month was $14,617.50. For the quarter ending August 15 owners to the number of 5,231 secured licenses, at a cost of $25,582. The total revenue for the quarter was $50,877, which is more than half for the entire first year of the department. Ohio is decidedly proud of its record.

From the Four Winds

N S E W



MITCHELL RANGER CARRYING A MILITARY MESSAGE TO COAST

Will Improve Roads—The first contract for the permanent improvement of country roads in La Crosse county, Wisconsin, has just been awarded. The Onalaska-Midway road will be surfaced with limestone. The work will cost $3,000.

Dayton Enterprise—The motor car dealers of Dayton, O., made arrangements to run a traction excursion to Indianapolis to accommodate the crowds which desired to witness the great motor races on the speedway. The car left at 5 o'clock Saturday morning and dropped the passengers within two blocks of the track. The party was under the direction of T. A. Phillips, of the Peckham Motor Car Co.

From Coast to Coast—All the way from California by motor car without a mishap worthy of a name, a Thomas Flyer with Mr. and Mrs. C. A. Littlefield and their son, R. W. Littlefield, pulled up last Thursday in front of the Worcester Automobile Club at Worcester, Mass., for dinner, and shortly after left on their journey to Hartland, Me., that being the destination of the car. They came by a southern route, traveling through Arizona, New Mexico and Texas, from which state they struck north into Oklahoma. The odometer showed on their arrival in Worcester 4,776 miles.

They Kick Anyway—That it is impossible to please all motorists in the matter of treatment of highways is well set forth by the stand taken by some of the fraternity regarding the oiling operations in the vicinity of Meriden, Conn. Long and loud has been the wail against the dust nuisance and some were free to express the opinion that Commissioner MacDonald was a bit lax. Now the commissioner, after having oiled the roads in the vicinity of Meriden, is made the target of abuse by some of the hard-to-please element. Obviously, oil sprayed on a road surface does not permeate at the turn of a hand and therein lies the trouble. Some had had their cars spattered and threaten to sue the state for reimbursement. Signs have been erected suggesting slow speed over the oil stretches. In the town of Portland, across the river from Middletown, portions of the highway have been oil-treated by private citizens to abate the dust nuisance.

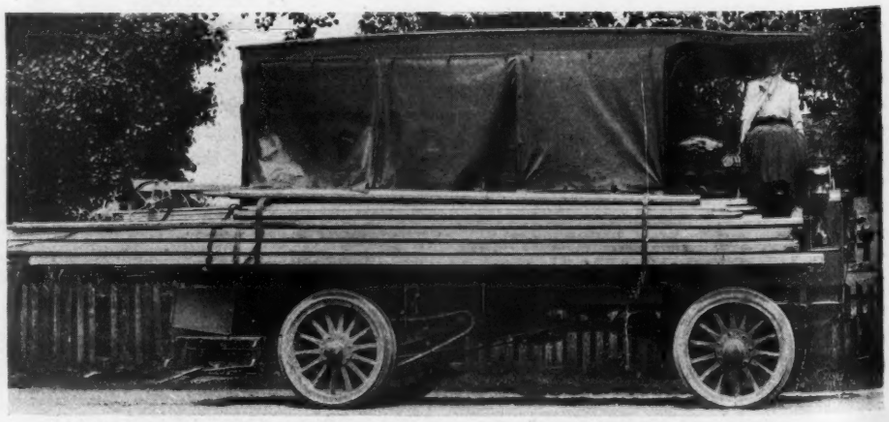
Road Hog Punished—Ernest Novak, a farmer of Racine county, Wisconsin, was found guilty of maliciously obstructing and blockading a public highway and fined $10 and costs in the Racine municipal court. The complaint was made by Henry Plow, of the Mitchell Motor Car Co., of Racine, who charged that on August 8, while returning from Milwaukee with a party of three women and his driver, Novak refused to permit him to pass and drove his horse in a manner that unduly blockaded the highway. A snail's pace was kept up for 55 minutes, a distance of only 5 miles being covered by both horse and the touring car. Each time Mr. Plow attempted to pass Novak drove his horse across the highway. This is the first case of this kind to come before a Wisconsin court. The defendant has appealed to the circuit court.

Fair Offers Prizes—The Wood County Fair Co. will award $100 in prizes to the four best decorated motor cars taking part in the parade to be held at Bowling Green, Ohio, during the last week in September. The money will be divided into prizes of $50, $25 and $10.

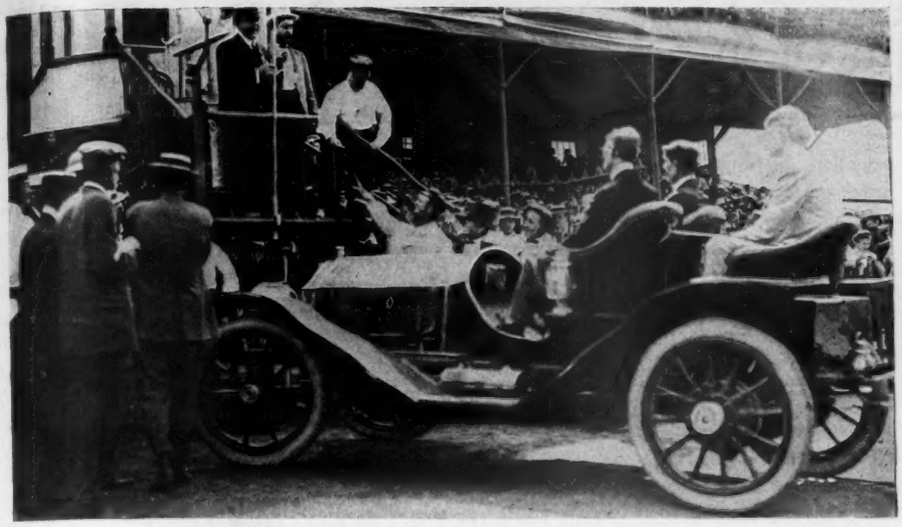
Will Build Model Highway—The Milwaukee county board has adopted plans for the first model highway by A. H. Hirst, state highway engineer, and bids are being received for the work, which will cost $10,000. The Janesville plank road, an ancient but principal thoroughfare, will be the object of this improvement. Later, when the county's apportionment of the $300,000 state good roads fund is available, several more of these old-time trunk lines will be boulevarded.

Sixty Cars in Parade—Sixty motor cars were required to handle the mine owners and operators of Spokane and the inland empire, in connection with the parade for mining men, which was a feature of the national irrigation congress during the week of August 8 at Spokane. R. B. Patterson's car was awarded first prize and a silver cup in the Spokane irrigation progress pageant, the car being trimmed in violet and white. The George Turner car was awarded second prize.

Connecticut Bill Passes—The amendments to the new Connecticut motor car law have passed the senate and the house. They provide that fees shall be at a flat horsepower rate. At the suggestion of Senator Alsop, Senator Chase offered an amendment striking out the Knight amendment providing for stoppage of cars at crossings and it was adopted. Senator Abbe offered an amendment reducing the



GRAMM-LOGAN TRUCK USED BY A MOVING-PICTURE SHOW MAN



GOVERNOR WILLSON PRESENTING REMEMBRANCE TO LEXINGTON GLIDDEN CAR DRIVER

tax on test cars from $2 to $1, which was adopted. Senator Higgins offered an amendment that tax for cars under 25-horsepower be at the rate of 50 cents per horsepower, which was adopted.

After Roads Convention—The Columbus chamber of commerce has started active work for securing for Columbus, O., the 1909 annual convention of the American Roadmakers' Association, which will be held in October. The association is made up of men directly responsible for road building in the various states of the country and is representative of the best sentiment of the good roads movement. The meetings will probably be held in conjunction with the annual meeting of the Ohio Good Roads Federation, October 27, 28 and 29.

Benjamin Will Run Meet—C. Arthur Benjamin has been commissioned by the management of the New York state fair to conduct a series of motor car races at the fair in Syracuse, N. Y., on Saturday, September 18. Assurances have already been received from Barney Oldfield, Fred K. Burnham, George Robertson, Chevrolet, Burman, De Witt and others and the prospects are that a big contest will be held. Mr. Benjamin also is chairman of the parade committee which will occupy the limelight on Monday evening of state fair week. He expects to have at least 500 cars in line on that night.

May Change Ohio Law—Ohio State Registrar of Automobiles Fred H. Caley announces that he will make only two recommendations to the next session of the Ohio general assembly for amendments to the state law. He considers that the law as it stands at present is about all that can be desired, excepting in two particulars which will be attended to. One of the recommendations will be for a nominal fee for the transfer of a license from one car to another by the same owner. At present each car must be licensed by each owner, but the amendment will provide that a man can transfer his set of tags to another car in case he disposes of his old machine. The other recommendation will be for some sort of an examination for chauffeurs.

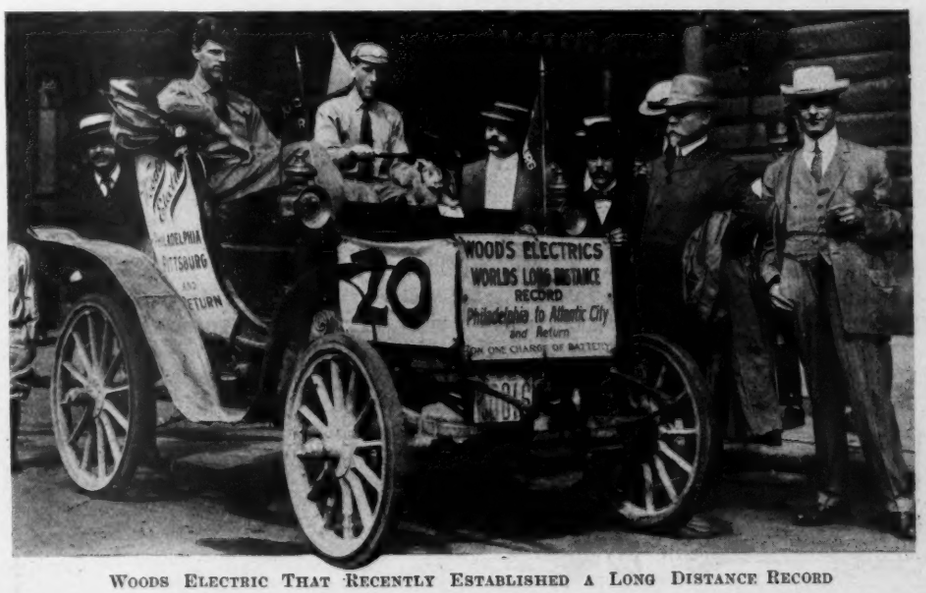
Edge Again Visiting America—S. F. Edge, the London motorist, slipped into Boston again very quietly last week for a few days to go over the situation relative to the Napier cars in this country. He said that he was only going to stay a week this time and that Mr. Napier would be over shortly to assume charge of the plant for some months, after which Mr. Edge is to take a turn at it. He is just as enthusiastic as ever over the possibilities of America as a field for motor cars. The prospects look bright now for the factory opening early in the fall.

Enter Premier Run—Thirty-five owners of Premier cars in Philadelphia have entered the reliability run to Cape May and return, which will be held under the auspices of the local agents, The Motor Co., on September 11 and 12. The start will be made at 11:30 a. m. from the Premier agency at 132-134 North Broad street, and the route to the shore will be via Camden, Haddon Heights, Magnolia, Berlin, Hammonton, Egg Harbor, where a compulsory 15-minute control for refreshments will be established; May's Landing, Tuckahoe and Cape May Court House—about 95 miles.

Rewards Glidden Heroes—The Lexington Motor Car Co. remembered the men who were responsible for the showing of the Lexington in the Glidden tour. A gold watch was given Driver Moore and Mechanic Blackburn and Observer Moore also were given tokens of the company's appreciation. Governor Willson, of Kentucky, made the presentations.

Mitchell Ranger En Route—Carrying Private Parrolt and Lieutenant Rosenthal Private Parrott and Lieutenant Rosenthal with a message from Major General Wood, commanding the department of the east, to Major General Weston in San Francisco, the Mitchell Ranger left Chicago Wednesday morning after having covered the distance from New York in 55 hours' running time. It was many hours ahead of schedule. On the way from New York, leaving last Thursday, the night stops were at Poughkeepsie, Utica, Elyria and Ligonier. The car is being driven by Frank Zirbes and so far not a mechanical mishap has marred the trip.

Is an Inventive Genius—A new use has been found for the commercial motor car. Everyone has heard, of course, of the extraordinary growth of the moving-picture show, but it has remained for an inventive genius by the name of Albert Taylor, of Mt. Sterling, O., to hitch together the moving-picture show and the moving vehicle, and so to take the show to the small towns which could not support one permanently. Mr. Taylor some months ago purchased a heavy 3-ton truck, which is shown in the accompany illustration loaded with his tent poles, tent and all the other paraphernalia of the show. He lights his tent and furnishes the power for the picture machine with a dynamo which is hitched to the flywheel of the motor, occupying the forward part of the bed of the truck. This, of course, is thrown off when the truck is running from town to town.



WOODS ELECTRIC THAT RECENTLY ESTABLISHED A LONG DISTANCE RECORD

The Realm of the Commercial Car

BOSTON TAXICAB DEAL

BY AN arrangement just concluded between the Boston Cab Co. and the Taxi-Service Co., of that city, a notable expansion of the taximeter cab business in Boston is inevitable. The Taxi-Service Co. has bought a substantial interest in the cab company, and while for the present they will operate as separate concerns, later they will probably be merged under the same management. One immediate result is the establishment now of taxicabs at some of the hotels where formerly there were cab stands. Another change that is to be brought about is the conversion of the cab company's stable on Massachusetts avenue into a taximeter cab garage. For this purpose it will be remodeled and made fireproof. When this is done the headquarters of the Taxi-Service Co. will be moved there. Until the two concerns are merged the cab company will furnish horse-drawn vehicles when desired by the taxi company and the latter will supply motor cabs at the request of the cab company. Eventually there is likely to be a change in the board of directors of both concerns. A. E. Morrison will continue as manager of the Taxi-Service Co.

DENVER FIGURES THE COST

The report of Terry Owens, chief of the fire department of Denver, Colo., on the cost of maintenance of the fire department motor car has just been made to the city authorities. The figures show that it costs the city an average of $1.19 per day to run its Stoddard-Dayton car, and the average mileage since it was put into service February 10, last, has been 20 miles per day. The total cost of repairs and new equipment amounted to $107.31 up to July 20. The total cost of oils, etc., totaled on this date $31.84. The gasoline consumed amounted to 423 gallons, costing $81.85. Chief Owens is well pleased with the result of this test. There is scarcely a fire in the downtown district that he does not reach before the first water is turned on, and the benefits of a motor car have been almost daily demonstrated since the chief has had this one in commission.

SPOKANE SERVICE PLANNED

Fifty thousand dollars is the capital stock of the Spokane Taxicab Co., organized in Spokane, Wash., by C. E. McBroom, cashier of the Exchange national bank; Robert H. Cosgrove, secretary of the Spokane Interstate Fair Association, and J. D. Williams, who is general manager of the corporation. Mr. Williams announces that an order has been placed for ten four-cylinder de Dion cabs which will be delivered this month, when a contract will be awarded for ten more. During the interstate fair in Spokane, September 20 to 25, the company intends to maintain a station at the fair grounds and will run cabs to and from the city every 3 minutes. The following schedule of rates has been made. For from one to three passengers, 30 cents for the first ¼ mile and 10 cents for each ¼ mile thereafter. A charge of 10 cents for each minute's wait while the car is chartered. These charges are the same for from three to six passengers, except that 10 cents is charged for ⅛ mile after the first ¼ mile.

NEW MOTOR AMBULANCE

A motor ambulance, the body of which at first glance appears to be a limousine, has recently been placed in service by the A. M. Ragsdale Co., an Indianapolis undertaking concern. The chassis was built by the Premier Motor Mfg. Co. and the body by Irvin Robbins & Son, both of that city. The body was designed by Mr. Ragsdale. The chassis is the same as those used on the regular Premier four-cylinder models. In the construction of the body and the entire ambulance as well speed, ease in riding and a wish to avoid the morbid curiosity of pedestrians were incorporated in the design. An additional feature, caused by a double floor, practically eliminates all sound from the machinery, while the patient is in the car. There is an entrance at each side, just back of the drivers' seat and half of the back of the car opens, forming an entrance for the stretcher, which is of a folding canvas design. The canvas is mounted on a wood and steel frame, which folds and locks to hold it in place. The stretcher is operated over a roller concealed under the cushions of the rear seat, and fits into steel grooves fastened to the front and rear of the interior of the body. The sides, back and front of the interior of the body are upholstered in black leather. There are two folding chairs, one of which is removed to make room for the stretcher, while the other forms a seat for the attending physician. There are also two small folding seats, fastened to the front of the patients' apartment. Half of the rear seat is also available when the stretcher is in use.

There is a double floor in the car, provision being made under the top floor for storing the stretcher when not in use, or for storing the revolving chair not used when the stretcher is in place. Two electric lights studded in the ceiling and operated by a storage battery, give sufficient light. The wheelbase is 128 inches in length, while the interior of the patients' apartment is about 7 feet 3 inches by 4 feet. There is a heavy reinforcing steel rod under each side of the car. Wheels are fitted with 34 by 4½-inch tires, but these are to be changed immediately for 35 by 5½-inch tires, the larger-sized pneumatic tires being found necessary. Shock absorbers are used, while the car has full-elliptic springs. So far the company has not found it necessary to employ a special driver, each employe being taught to operate the car, which is ready for runs, night or day. The body is finished in dark green, striped with red. Each window is fitted with curtains which bear the company's name. When the ambulance is approaching the patients' home or hospital, however, these curtains are raised, thus removing all appearance of an ambulance. The car weighs 3,600 pounds and has attained a speed of 40 miles an hour.

MORE CARS FOR UNCLE SAM

It is not improbable that within a short time all of the collection and a part of the delivery of mail in Indianapolis will be accomplished with motor cars. Three cars are now in use, having been built especially by the Overland Automobile Co., and the work has been so successful that Postmaster Robert Bryson is anxious to secure several additional cars. Three horse-drawn wagons have been taken out of service and it is claimed that each of the motor cars is doing the work of three horses. The cars average from 52 to 64 miles a day, including Sunday. From 7 a. m. until 8 a. m. the cars carry out seventy-five large bundles of mail to points where they can be taken conveniently by carriers, make thirty deliveries to factories on the outskirts of the city and collect mail from seventy-three street boxes. For the 10 o'clock morning delivery the cars make seventy deliveries of mail to factories and business houses and collect mail from 168 boxes. At 5 p. m. the cars start out on a collection trip which includes 441 boxes. With the increase in the cost of horses and feed, the comparative cost of maintaining and operating motor cars is decreasing. The following increases are noted by the post-office department: Horses that formerly cost $60 to $75 have increased to $150 to $175 each; corn has increased from 35 cents to 85 cents a bushel and oats have increased from 40 cents to 60 cents. Hay also has increased from $12 to $17 a ton.

The Motor Car Repair Shop

Hints for the Amateurs

TWO TIRE HINTS

TO PROTECT the inner tube from punctures place a strip of heavy felt about ½-inch thick between the outer case and the inner tube. The felt should be wide enough to project slightly beyond the tread of the tire and should be cemented in the center with a good quality of cement in order to secure proper adhesion to the lining of the fabric of the case. The edges, however, should be left free. The felt after being in use some time becomes very compact and affords an excellent protection for the inner tube from tacks and other sharp substances.

When replacing tire tubes a very neat and handy way to lubricate them is to distribute the talcum powder by means of a small dust blower, which can be obtained at any drug store and is used for the purpose of laying down roach powder. The use of this blower will result in the powder being easily and evenly distributed.

REMOVING A HUB CAP

It is said that necessity is the mother of invention, and this truth was demonstrated in a small way as shown in the following episode. A car was once brought in the shop with the request that the hub caps of the rear wheels be removed and something done to prevent the leakage of oil therefrom. The hub caps were of a peculiar type as may be seen from the illustration H C in Fig. 1. They were quite large in diameter and round, and the only provision for getting a grip on them was in the holes sunk into the periphery designated by the dotted lines H. After casually looking the case over, the foreman assigned the job to a young mechanic, with instructions to remove the caps and fit on paper washers to render them oil-tight; and also advised that care be used in removing the cap so as not to mar or burr up the holes. The young repairman found the caps to be exceedingly tight owing to the fact that he overlooked and neglected to remove the little set screw S, which happened to be out of sight on the under portion of the cap. Undaunted, however, he quickly forged a spanner wrench A, which enabled him to secure a very good grip on the cap, but the lug L proved unequal to the strain and sheared off. Another lug was soon replaced by drilling a hole, just a trifle smaller than the holes in the caps, in the end of the injured tool; then driving into this a short piece of round iron as represented by L2 of tool B, which is tool A repaired and slightly changed. To increase the strength of the tool it was then placed on the hub cap and marked off. Two more holes of the same size as those in the cap were drilled into the tool so that the two pieces of round iron M could be easily slipped into them. The tool was now applied to the hub cap and the pieces M slipped into place as shown in illustration F. If anything would have loosened the cap this certainly should have; but, fortunately the foreman came up just then, and after complimenting the young man on his ingenuity as a toolmaker, advised him to remove the little set-screw S. This done, the caps were easily removed and the job quickly finished.

CARBURETER TROUBLES

It is a pity to note the narrowmindedness exposed by some members of the retail motor car trade in dealing with customers who, on account of the inefficiency of their carbureters, substitute carbureters of a different make. Think of a motorist who, on purchasing a car, is assured that the car will run from 15 to 20 miles on a gallon of gasoline; after running it as economically as possible for sometime, he finds that the best he can get out of it is 8 or 9 miles per gallon. He goes to the dealer, who very knowingly states that the engine is getting too rich a mixture, and orders a mechanic to cut same down. The mixture is cut down as advised, and as a result the motorist is aware of a marked loss in power efficiency, where previous to the adjustment he had but to turn the crank over once or twice to start the motor, he now must flood the carbureter, then spin the motor—a most evil performance, which has caused many serious injuries to novices, and often results in torn clothing for even the most expert. After giving this adjustment a fair trial he finds that notwithstanding the inconvenience he gets but 1 or 2 miles more from the gallon. Again approaching the dealer, more adjustments are made. This goes on for several weeks, continual trials and adjustments, till, at last, even the original efficiency is unobtainable, owing to the damage done the carbureter by the experimental adjustments attempted. About this time, when the motorist drives up in front of the salesroom, the salesman makes a hurried exit at the rear. At last, in sheer desperation, the motorist buys another carbureter of a more prominent make, has it fitted, and all is well for some time. In a few months, however, the motorist again returns with a complaint that his motor is missing a little, and is promptly greeted with a "Well, that is not our carbureter and we can't have our men wasting their time trying to make adjustments on carbureters other than those designed for our engines," etc. This is a common occurrence, and we cannot imagine anything more detrimental to the business. Purchasers are more often guided by the advice of their friends who own cars than by the reputation of a car or the ability of the salesman, and the successful dealer is the one who holds his customers.

MADE MATTERS WORSE

A few days ago a tire was found to have sprung a slow leak and while pumping it up, a screw was found embedded in the casing so that only the head was visible. Having pumped the tire till it stood up full and round the leakage was very slight and the car might have been run for many miles before more air would have been necessary. But unmindful of the fact that he was in a hurry and that he had no extra inner tube or facilities for making a repair, the owner thoughtlessly removed the screw, whereupon the tire quickly went flat.

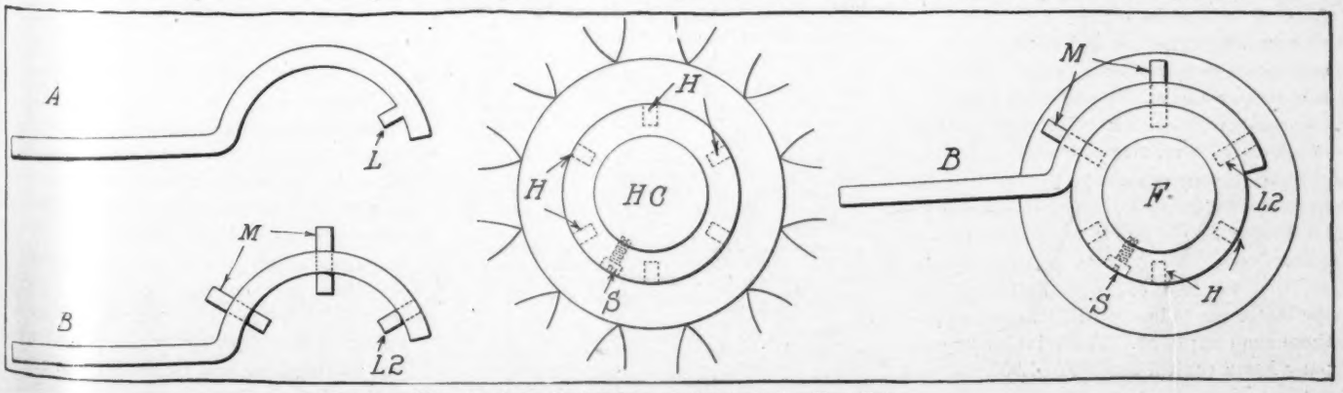


FIG. 1—CARE NECESSARY IN REMOVING A HUB CAP

Brief Business Announcements

Columbus, O.—The Ewing Automobile Co., of Cleveland, has increased its capital stock of $150,000 to $175,000.

Trenton, N. J.—Harry B. Salter, who is city clerk here, has entered the motor car business and in the future is to act as agent for the Hudson.

Austin, Tex.—The South Texas Automobile Agency, of Falls City, has been incorporated with a capital stock of $3,000, by C. W. Sims and Hugh Knight.

Trenton, N. J.—Plans have been filed with the building department for the erection of an addition to the factory of the Ajax-Grieb Rubber Co., on Breunig avenue.

Orlando, Fla.—The new garage which is being built for H. L. Beeman near the San Juan hotel is rapidly nearing completion. Mr. Beeman has just been appointed agent for the Studebaker.

Springfield, Mass.—The Springfield Automobile Co. is now located in its new quarters at 40 Liberty street, and has cars of all kinds, both gasoline and electric, as well as an assortment of trucks.

Jacksonville, Fla.—Work is progressing on the new four-story concrete garage which is being erected for Fred Gilbert on the northwest corner of Church and Laura streets. The new structure is to cost $40,000.

Louisville, Ky.—The F. Kahler Co., which is erecting a new factory on North Vincennes street, has just received a contract for a number of motor car bodies for a large eastern firm. The contract amounts to about $30,000 and will keep the company busy for several months.

Chicago—The Baker Electric Vehicle Agency has leased for 10 years the property on Michigan avenue, 100 feet south of Twenty-third street. Work is to begin at once on the new building, and it is to be ready for occupancy by May 1. At present the Baker agency is located at 1714 Michigan avenue.

Akron, O.—The Buckeye Rubber Co., which was engaged in the manufacture of tires for a New York selling concern, suffered a severe loss from fire during the past week. The main building was destroyed, together with a large quantity of raw materials and compounds, the loss being estimated at $200,000. The company is planning to rebuild at once.

New Haven, Conn.—It has been stated that the Winchester Repeating Arms Co. is shortly to go into the manufacture of motor cars. Work is in progress on the erection of two concrete buildings, and the motor car industry will start as soon as these are completed. The Winchester company has a capital stock of $1,000,000, and a short time ago the legislature enlarged the charter of the company, and it is said that this will permit the concern to go into the manufacture of motor cars.

Newark, N. J.—A permit has been granted to George L. Smith for the erection of a two-story brick garage at 50 Spring street.

Birmingham, Ala.—A company has been organized here with a capital stock of $200,000 and is to engage in the manufacture of motor cars.

Columbus, Ga.—The Georgia Automobile Exchange has purchased a lot on Second avenue and proposes to erect a $10,000 garage for the use of the company.

Boston, Mass.—The Stevens-Sowers Motor Car Co. has been appointed agent for the Jackson and Fuller and in the future will make its headquarters at 821 Boylston street.

New York—James Joyce, who is the manager of the motor car department of the American Locomotive Co., has announced that in the future the office of sales manager will be filled by B. B. Van Dyke, who will make his headquarters at the New York office at 1886 Broadway.

Atlanta, Ga.—The Atlanta Auto Trades Association has made application for a charter, with a capital stock of $2,000, with the privilege of increasing it to $100,000. The object of the new concern is the development, promotion and publicity of the motor trade in all of its branches, particularly of the tools and equipments and accessories. E. W. Gans, W. S. McNeal, G. M. Seward, W. D. Alexander and several others are interested in the new enterprise.

Muskegon, Mich.—The Olsen Construction Co. has been granted the contract for the erection of the new plant for the Gary Motor Car Co.

Cooperstown, N. Y.—Arthur H. Urist is erecting a new garage here and when finished is expected to be one of the finest in this part of the state.

Pittsburg, Pa.—Plans are being prepared for the erection of a new garage for the Standard Automobile Co., to be located at Grant boulevard and Bellevue avenue.

South Bend, Ind.—The makers of the Simplex are planning to double the capacity of their plant at Mishawaka. It is estimated that the new building is to cost $40,000.

Pittsburg, Pa.—The Cox Co., of Harrisburg, is preparing to open a new garage at 23 South Fourth street, Harrisburg. The concern has the agency for the Stoddard-Dayton and the Herreshoff.

Pittsburg, Pa.—W. F. Reynolds, who has recently been appointed manager of the new Franklin branch here, has secured quarters at 5926 Baum street, and will take possession on September 1.

Trenton, N. J.—Articles of incorporation have been filed by the Automobile Service Co., of Camden, with a capital stock of $50,000. F. R. Hansell, W. F. Eidell and J. A. MacPeak are the incorporators.

Kansas City, Mo.—Louis J. Long, of the wholesale grocery firm of Long Brothers, has formed a partnership with Clifford Histed and will go into the motor car business as representative for the American Simplex and Overland. The new firm is to make its headquarters at 1527 Grand avenue.

Boston, Mass.—In the future the Taxi-Service Co. and the Boston Cab Co. are to work in conjunction. The Taxi-Service Co. has bought a substantial interest in the cab company, and though for the present the two are to be operated as separate concerns, they will shortly be merged under the same management. A. E. Morrison is to continue as manager of the Taxi-Service Co.

San Francisco, Cal.—H. A. Harrison, who is the agent on the coast for the Peerless, is about to open a new salesroom and garage on Van Ness street, between Golden Gate avenue and McAllister street. The building, which is a two-story structure, is a brick and concrete affair. The first floor is to be used for the showrooms and offices, with a garage in the back, while the second floor will be devoted to the repair and stock departments.

Recent Incorporations

Dallas, Tex.—Ferris Dunlap Motor Car Co., capital stock $10,000. Incorporators F. A. Ferris, O. Dunlap and Neill White.

San Antonio, Tex.—Lemly-Mills Auto Co., capital stock $20,000. Incorporators F. H. Lemly, G. C. Mills and J. H. Gibson.

Columbus, O.—Instantaneous Lighter Co., capital stock $30,000; to manufacture an automatic lamp lighter, by means of which motor car lamps may be lighted without moving from the seat. F. C. Barger is to be the president and L. B. Barger, treasurer.

Louisville, Ky.—Falls City Automobile and Garage Co., capital stock $50,000; to operate a garage and repair shop and deal in motor cars, motorcycles and vehicles of other kinds. Incorporators W. J. Day, R. J. Hogan and Barton B. Bales.

Trenton, N. J.—Pope-Hartford Co. of Newark, capital stock $30,000; to engage in the manufacture of motor cars. Incorporators Charles G. Pilgrim, Mary E. Lane and J. M. Hulburt.

Newark, N. J.—Linkroum Automobile Co., capital stock $20,000; to manufacture motor cars, motors, etc. Incorporators Courtlandt and William H. Linkroum and C. R. Erith, all of Newark.

Newark, N. J.—Union Motor Car Co., capital stock $125,000; to manufacture motor cars, locomobiles, etc. Incorporators P. Broderson, A. Broderson and F. C. Stowers, all of East Orange.